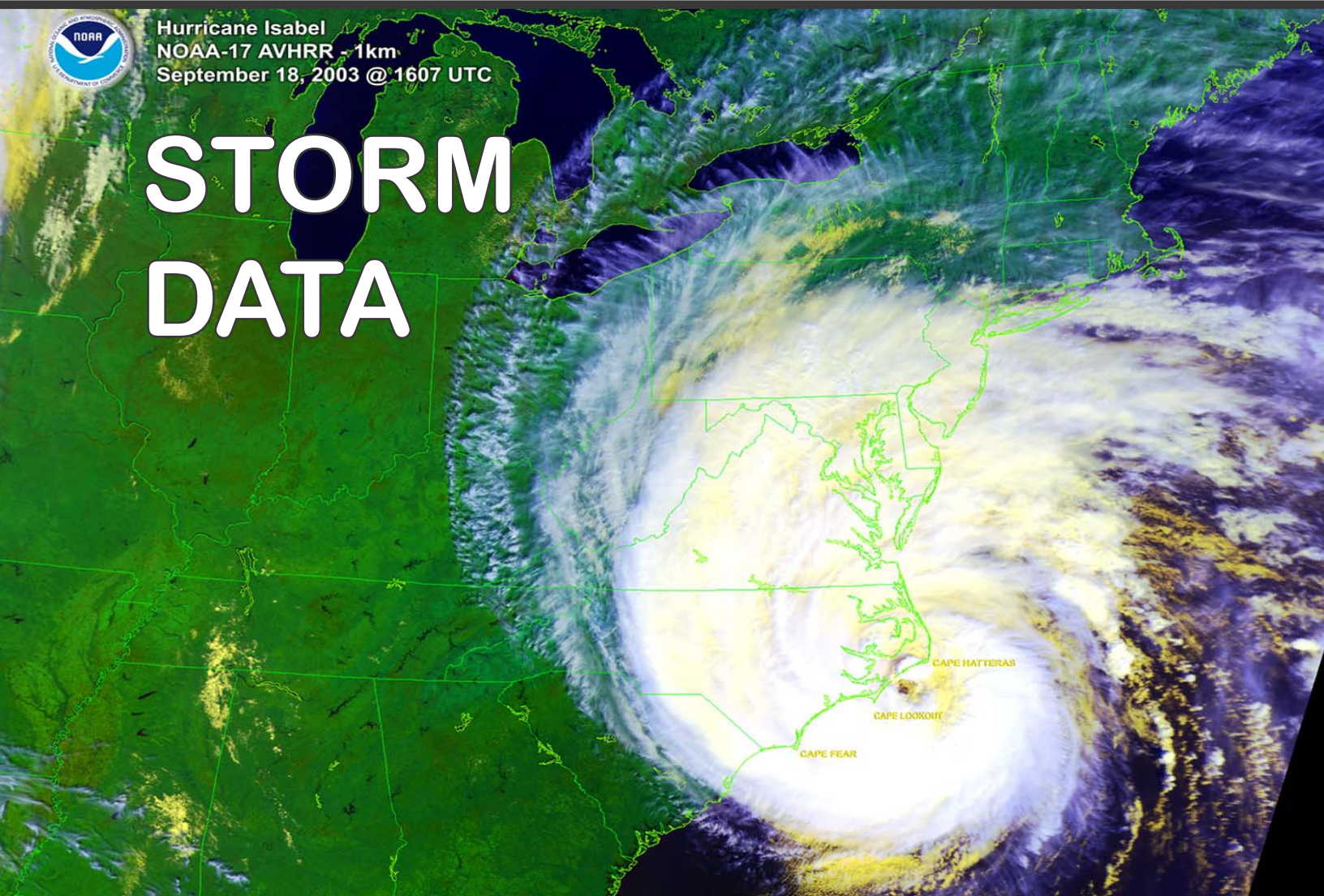


**SEPTEMBER 2003
VOLUME 45
NUMBER 9**



**Hurricane Isabel
NOAA-17 AVHRR - 1km
September 18, 2003 @ 1607 UTC**

STORM DATA



**AND UNUSUAL WEATHER PHENOMENA
WITH LATE REPORTS AND CORRECTIONS**



noaa

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE
NATIONAL CLIMATIC DATA CENTER, ASHEVILLE, NC

Cover: Hurricane Isabel as a category 2 hurricane on the Saffir-Simpson Hurricane Scale on September 18, 2003 at 1607 UTC. Image was taken approx. one hour prior to landfall near Drum Inlet, NC with winds at 85 knots, gusting to 105 knots. Total damage is estimated at \$3.37 billion dollars. (*Satellite courtesy: Axel Graumann, NCDC/NOAA.*)

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STORM DATA

(ISSN 0039-1972)

National Climatic Data Center

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The Storm Data and Unusual Weather Phenomena narratives and Hurricane/Tropical Storm summaries are prepared by the National Weather Service. Monthly and annual statistics and summaries of tornado and lightning events resulting in deaths, injuries, and damage are compiled by the National Climatic Data Center and the National Weather Service's (NWS) Storm Prediction Center.

STORM DATA contains all confirmed information on storms available to our staff at the time of publication. Late reports and corrections will be printed in each edition.

Except for limited editing to correct grammatical errors, the data in Storm Data are published as received.

Note: "None Reported" means that no severe weather occurred and "Not Received" means that no reports were received for this region at the time of printing.

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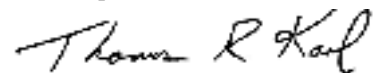
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The editor of **STORM DATA** solicit your help in acquiring photographs (prints or slides; black and white, or color), maps, clippings, etc. of significant or severe weather events (past or present) for use in the "Outstanding Storms of the Month" section of **STORM DATA**. We request our subscribers or other interested persons to mail such items to:

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National Climatic Data Center
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Asheville, NC 28801
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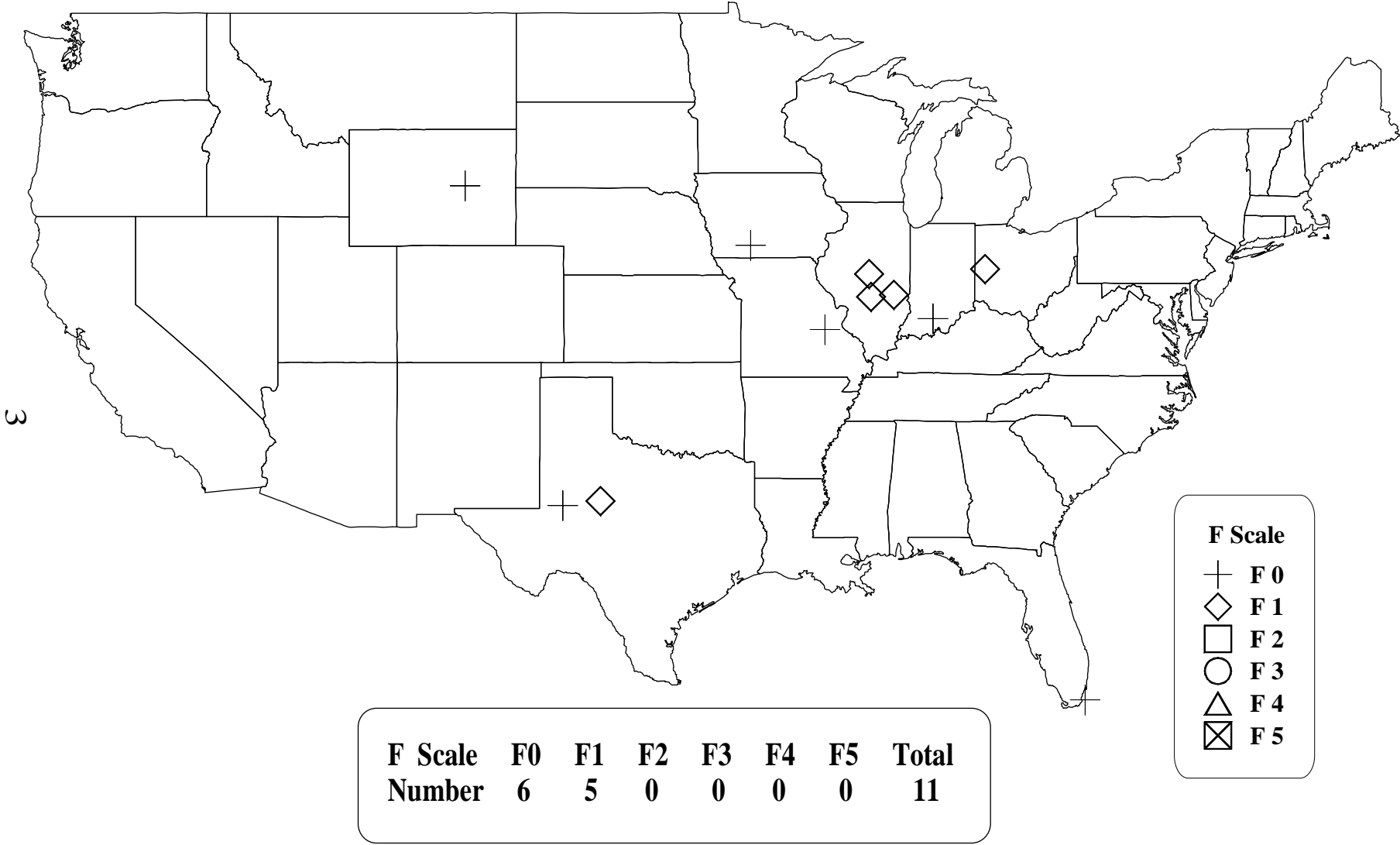
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This is an official publication of the National Oceanic and Atmospheric Administration and is compiled from information received at the National Climatic Data Center Asheville, North Carolina 28801-2733.



Thomas R. Karl
Director,
National Climatic Data Center

September 2003 Confirmed Tornadoes



OUTSTANDING STORMS OF THE MONTH

**THERE IS NO
“OUTSTANDING STORM OF THE MONTH”
FOR THE MONTH OF SEPTEMBER 2003.**

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
Killed	Injured									

ALABAMA, Central

NONE REPORTED.

ALABAMA, North

NONE REPORTED.

ALABAMA, Southeast

ALZ069

Houston

05 2050EST
2230EST

0

0

Flood

Three to five inches of rain flooded several roads in Cowarts, Hodgesville and Dothan. Reported by the Houston County EMA.

ALZ067

Henry

05 2055EST
2200EST

0

0

Flood

Up to three inches of rain flooded some county roads in the southern portion of the county. Reported by the Henry County EMA.

ALABAMA, Southwest

NONE REPORTED.

ALASKA, Northern

AKZ220-222>224

Yukon Flats Nearby Uplands - Middle Tanana Valley - Deltana And Tanana - Upr Tanana Vly Fortymile

01 1615AST
08 1100AST

0

0

Flood

Rainfall of one to three inches over the Yukon-Tanana Uplands and greater Faribanks Area caused rivers to flood in a few areas:

Zone 222:

The Upper Chena River at mile 37 Chena Hot Springs Road exceeded flood stage with one foot of water on the road on the 2nd. For the Upper Chena River between Chena Hot Springs Road and the Moose Creek Dam, flooding occurred on the morning of the 4th until the afternoon of the 5th. The flood waters were impounded behind the Moose Creek Dam for a while, being released gradually so that Downtown Fairbanks would not experience flooding. The impounding of the water created groundwater flooding of the Steamboat Landing subdivision in North Pole downstream from the Dam, until the morning of the 8th.

Zone 223:

The Salcha River at the Richardson Highway Bridge crested one foot above flood stage early on the morning of the 4th, and was below flood stage by noon that day; flooding occurred at the boat launch at the Richardson Highway bridge, along with large amounts of debris being flushed down the river

Zone 224:

Several cabin owners on the upper Salcha River reported water around numerous structures

The flooding coincided with the opening of moose hunting season and a time when rivers are heavily used by hunters accessing remote areas. The Alaska State Troopers reported several incidences where stranded hunters were plucked from the banks of area rivers. Rescues occurred on the Upper Chena River (zone 222), Birch Creek (zone 220), and on the Yukon River (zone 220). Some vehicles were also flooded on the lower Chatanika (zone 222) as unsuspecting hunters parked close to the rivers edge prior to the rise in water level.

AKZ201>202-202

Western Arctic Coast - Northern Arctic Coast

08 1630AST
11 0930AST

0

0

Storm Surge

A 978 mb low moving east across the Arctic Ocean north of barrow decelerated after the 8th and circled counter-clockwise, ending up closer to Barrow (zone 202) on the 10th and 11th before finally moving away. Minor beach erosion occurred at Barrow on the 8th, then more substantial erosion occurred at Barrow on the 10th and 11th, with waves 10 to 12 feet on top of a high swell. Roads around Barrow which experienced erosion during the July storm, had further erosion with this event (Stevenson Street and Egasik Street). Some beach erosion occurred at the village of Wainwright (zone 201) during the 10th and 11th.

AKZ222

Middle Tanana Valley

12 0500AST
13 0900AST

0

0

Flood

An inch of rain fell over the Chena Basin creating high water on the Chena River which produced minor flooding of Chena Hot Springs Road at mile 37.

AKZ226

Ne. Slopes Of The Ern Ak Rng

28 1000AST
2015AST

0

0

High Wind (G50)

A strong warm front moved north over the Alaska Range and produced south winds gusting to 58 mph through Isabel Pass, as reported by a pilot flying 300 to 400 feet above the ground. Mesonet meteorological stations maintained by the U.S. Army reported occasional wind gusts between 50 and 55 mph.

AKZ226

Ne. Slopes Of The Ern Ak Rng

30 0930AST
2359AST

0

0

High Wind (G62)

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ALASKA, Northern

Several weather systems moving north over Alaska from the Gulf of Alaska produced a periods of strong winds across the Alaska Range. In zone 226, One of the mesonet meteorological stations (Texas Range) maintained by the U.S. Army reported winds as high as 71 mph. Delta Junction ASOS in zone 223 reported a peak gust of 56 mph, though no injuries or damage was reported. Event continued into October.

ALASKA, Southeast

NOT RECEIVED.

ALASKA, Southern

AKZ185

Eastern Aleutians

15 1155AST 0 0 High Wind (G73)
1435AST

A strong high pressure system persisted in the Bering Sea as a low pressure system and the associated front pushed up from the southwest. This resulted in strong gusty wind that peaked at 84 mph between 1155 am to 1235 pm at Dutch Harbor.

AKZ131

Nern P.W. Snd

18 0015AST 0 0 2.5K High Wind (G60)
0315AST

Northeast wind gusted to 69 mph shortly after midnight September 18th. a combinations of strong low pressure in the Gulf of Alaska and high pressure over the interior produced the gusty winds. In Valdez a temporary tent was destroyed and a sign for a local restaurant was also destroyed by the gusty winds.

AKZ101-125

Anchorage Muni To Bird Creek - Wrn P.W. Snd & Kenai Mtns

30 0351AST 0 0 High Wind (G76)
2359AST

A strong storm moved into the southwest Gulf of Alaska creating strong winds across the Chugach mountains and especially in the channeled terrain of Turnagain arm. The winds resulted in area wide power outages in the Anchorage bowl on out to Girdwood the morning of October first. Winds for this event peaked at 88 mph at McHugh Creek RWIS at 0451 am AST September 30th. Winds peaked at Glenn Alps at 81 mph at 5 pm AST September 30th. The winds at Portage visitor center are an estimated peak of 80 mph occurring at 253 am AST.

AMERICAN SAMOA

NOT RECEIVED.

ARIZONA, Central and Northeast

Coconino County

Doney Park

01 1145MST 0 0 Hail (0.88)
1200MST

Dime (3/4) to nickel sized (7/8 inch diameter) hail fell in Doney Park.

Coconino County

Flagstaff

01 1230MST 0 0 Hail (1.00)

One inch diameter hail fell 10 miles northwest of Flagstaff.

Coconino County

Flagstaff

01 1240MST 0 0 Hail (1.00)
1245MST

Quarter sized (1 inch diameter) hail was reported in Hart Prairie. The hail was two to three inches deep after the storm had passed.

Coconino County

Sedona

01 1510MST 0 0 Hail (1.00)
1525MST

Quarter sized (1 inch diameter) hail was reported in southeast Sedona.

Navajo County

Snowflake

01 1520MST 0 0 Hail (0.88)
1535MST

Nickle sized (7/8 inch diameter) hail fell in western Snowflake.

Coconino County

Clints Well

01 1635MST 0 0 Flash Flood
1745MST

Flash flooding covered State Highway 87 with 5 feet of water about 17 miles northeast of Clints Well.

Yavapai County

Mayer

02 1715MST 0 0 Hail (0.75)
1725MST

Dime sized (3/4 inch diameter) hail was reported in Mayer.

Coconino County

Flagstaff

03 1130MST 0 0 Hail (1.00)

Three-quarter to one inch diameter hail was reported at an elementary school in Flagstaff.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ARIZONA, Central and Northeast

Yavapai County

Prescott **04** **1400MST** **0** **0** **Hail (0.75)**
 1408MST

Pea to penny sized (1/4 to 3/4 inch diameter) hail was reported in Highland Pines west of Prescott.

Yavapai County

Prescott **05** **0001MST** **0** **0** **10K** **Lightning**
 Lightning struck a radio station in Sedona and caused \$10,000 damage to electrical equipment.

Yavapai County

Prescott **06** **0955MST** **0** **0** **Hail (0.75)**
 1010MST

Dime sized (3/4 inch diameter) hail was reported in Prescott.

Navajo County

Cibecue to **06** **1530MST** **0** **0** **Flash Flood**
(Sow)Show Low Muni **1630MST**
A

Flash flooding caused Cibecue creek rise 8 to 10 feet in the town of Cibecue.

Yavapai County

Cordes Junction **07** **1730MST** **0** **0** **Hail (1.50)**
 1745MST

Half dollar sized (1 1/4 inch diameter) hail was reported 12 miles southeast of Cordes Junction.

Gila County

Roosevelt **09** **0245MST** **0** **0** **Flash Flood**
 0500MST

Persistent heavy rains (up to 10 inches) during the late night and early morning flooded the Pinto Creek and a nearby creek. A wall of water, 4 to 6 feet deep, rushed through Roosevelt Estates. Telephones, electricity and water service was knocked out. The worst of the damage occurred in the southeast portion of the Estates at Pine and Ash Streets. About 200 homes were damaged, and 5 were destroyed. The Roosevelt Lake Resort had considerable water damage, and a rock house on route 288 and the Salt River was damaged by flooding.

Coconino County

Bellemont to **09** **0810MST** **4.5** **100** **0** **0** **Tornado (F0)**
Flagstaff **0815MST**



A tornado knocked these trees across Forest Service Road 222 about 5 miles north of Flagstaff. Note the direction that the trees are pointed.

A tornado was observed about 2 miles north of the National Weather Service office in Bellemont. The tornado moved northeast though an unpopulated ponderosa pine forest. The tornado crossed several Forest Service roads and Highway 180 and knocked trees across these roads. It is estimated that over a hundred trees were uprooted or snapped off. Some of the trees were over 2 feet in diameter. The tree damage was intermittent along the whole 4 1/2 mile path. Less than 10% of the tornado path had damage.

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
Killed									
Injured									
Property									
Crops									
Character of Storm									
<u>ARIZONA, Central and Northeast</u>									
Coconino County									
Tuba City	09	1230MST 1400MST			0	0			Flash Flood
Heavy rain caused significant flooding in and around the town of Tuba City.									
Navajo County									
White Cone	09	1315MST 1330MST			0	0			Thunderstorm Wind (G50)
A roof was blown off a building in White Cone.									
Navajo County									
White Cone	09	1315MST 1400MST			0	0			Flash Flood
Heavy rain and flooding washed out several roads in the White Cone area.									
Navajo County									
Shonto to Kayenta	09	1640MST 2030MST			0	0			Flash Flood
Several thunderstorms produced heavy rain and flooding between Shonto and Kayenta late in the afternoon. Significant flooding was reported with these storms as they moved through the area. Portions of State Route 98 were washed out near Kayenta. Vehicles were stranded and the people were evacuated.									
Apache County									
Wide Ruin	09	1850MST 1915MST	1	100	0	0			Tornado (F0)
A tornado uprooted trees 12 miles west of Wide Ruins.									
Navajo County									
Polacca	09	1930MST 2030MST			0	0			Flash Flood
Heavy rain cause flash flooding near the community of Polacca. Buses were trapped by the flood waters.									
Apache County									
Ft Defiance to Chinle	09	2045MST 2300MST			0	0			Flash Flood
A large area of thunderstorms produced flash flooding in Apache county from Fort Defiance north to Chinle.									
<u>ARIZONA, Northwest</u>									
Mohave County									
Lake Havasu City	03	2023PST 2235PST			0	1	15K		Flash Flood
Runoff from heavy rain caused a car to be swept off the road into a wash. One woman inside the car was rescued and taken to a local hospital with undisclosed injuries.									
<u>ARIZONA, South</u>									
Graham County									
Safford	06	1720MST 1840MST			0	0	0	0	Flash Flood
Thunderstorms developed and moved over southern portions of Safford producing heavy rain. Doppler radar estimated one to three inches of rain had fallen over the area during the storm event. Several properties in the Daley Estates area flooded and police had to barricade some roads due to the flooding.									
Cochise County									
Charleston	06	1820MST 1940MST			0	0	0	0	Flash Flood
Thunderstorms developed and remained nearly stationary over central portions of Cochise county producing heavy rain. Doppler radar estimated one to three inches of rain had fallen over the area between Tombstone and Charleston. Sherif dispatch closed Charleston Road between the San Pedro River and Tombstone due to flooding									
Cochise County									
Hereford	08	1355MST 1400MST			0	0	0	0	Hail (0.75)
A severe thunderstorm developed over the Hereford area producing large hail. A spotter reported hail ranging in size from a half of an inch to three quarters of an inch in diameter.									
Cochise County									
Douglas	08	1530MST 1630MST			0	0	0	0	Flash Flood
Strong thunderstorms over the town of Douglas produced heavy rain which caused street flooding. A spotter recorded 1.80 inches of rain in less than an hour. Several roads were also closed due to flooding, including an intersection at Golf Course and Washington Avenue that was closed due to a foot of water.									
Pima County									
Tucson	08	1615MST 1620MST			0	0	0	0	Hail (1.00)

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ARIZONA, South

A severe thunderstorm moved across southern portions of Tucson producing large hail. A spotter reported one inch diameter in size hail at Pantano and Golf Links Roads.

ARIZONA, Southwest

La Paz County

Quartzsite	02	1920MST			0	0	200K		Thunderstorm Wind (G70)
		1930MST							

Extensive damage in town due to microburst winds. Power poles were knocked down and trailers were overturned. The Desert Gardens Mobile Home and Car Sales sustained the heaviest damage with several mobile homes destroyed.. Signs along I-10 were blown down, and Arizona highway 95 was closed for a short time.

Maricopa County

Wickenburg	04	1740MST			0	0			Hail (1.00)
		1830MST							

Several reports of large hail, from dime size to one inch diameter, in and near Wickenburg.

Maricopa County

Tempe	04	1834MST			0	0			Hail (0.75)
		1837MST							

Maricopa County

Phoenix	04	1845MST			0	0			Thunderstorm Wind (G60)
		1855MST							

Shingles blown off roof.

Maricopa County

Wickenburg	04	1855MST			0	0			Flash Flood
		1930MST							

Sols Wash grew to about 150 feet wide, and Flying E Wash was running full. Flooding closed Vulture Mine Road due to flooding.

Maricopa County

3 S Waddell	04	1900MST			0	2			Flash Flood
		2100MST							

Flash Flooding at the entrance to the White Tank Mountain Regional Park near the intersection of Olive Rd and Citrus Rd. Very heavy rain occurred in the area between 7:00 PM and 9:00 PM MST. A vehicle with two male occupants was swept off of Olive Rd. around 8:30 PM MST. The two occupants attempted to leave the vehicle and were swept down the wash approximately 60 yards. A swift water rescue by law enforcement had to be conducted after they became trapped in rushing water approximately 3 feet deep. The individuals suffered minor injuries (cuts and bruises) as a result of the incident.

Maricopa County

Paradise Vly	06	1410MST			0	0			Thunderstorm Wind (G60)
		1420MST							

Estimated 60 MPH wind gust reported at the intersection of 50th St. and Lincoln Ave. in Paradise Valley.

ARKANSAS, Central and North Central

Izard County

Guion	02	0536CST			0	0			Flash Flood
		0830CST							

Izard County

5 SW Mt Pleasant	02	0625CST			0	0			Flash Flood
		0845CST							

Izard County

Countywide	02	0720CST			0	0			Flash Flood
		0845CST							

Heavy rains resulted in flash flooding over a large part of Izard County. A number of county roads were covered by high water and closed for several hours after the rains ended.

Sharp County

Ash Flat	02	0650CST			0	0			Flash Flood
		1130CST							

Sharp County

Highland	02	0650CST			0	0			Flash Flood
		1130CST							

Storm Data and Unusual Weather Phenomena

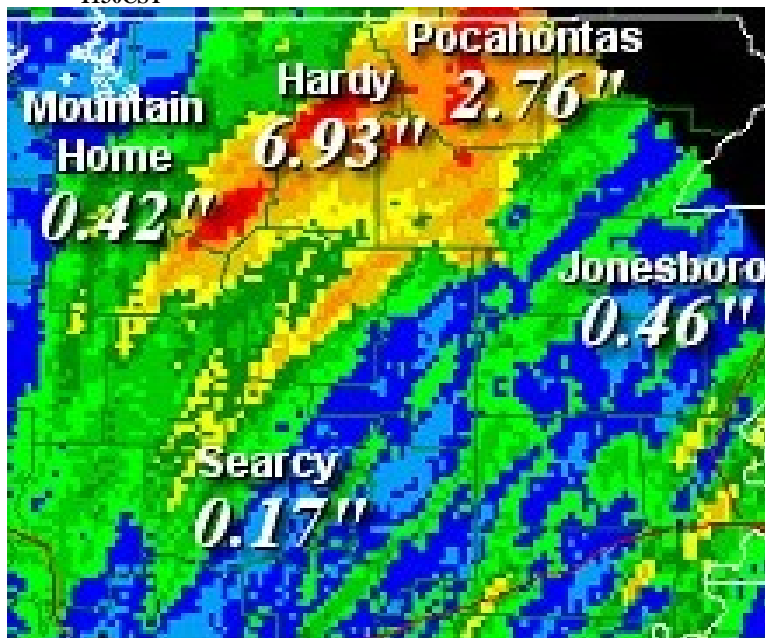
September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ARKANSAS, Central and North Central

Sharp County
Countywide

02	0745CST 1130CST	0	0	Flash Flood
----	--------------------	---	---	-------------



In the picture: Twenty four hour precipitation ending at 7 am CDT on 09/03/2003. Amounts included almost 7 inches of rain at Hardy (Sharp County)!

Heavy rains caused widespread flooding across Sharp County. A number of highways and county roads were closed due to high water levels. Several vehicles were washed off some roadways. No injuries or damage was reported.

Stone County
Marcella

02	0800CST 0930CST	0	0	Flash Flood
----	--------------------	---	---	-------------

Stone County
Pleasant Grove

02	0800CST 0930CST	0	0	Flash Flood
----	--------------------	---	---	-------------

Heavy rains caused flash flooding to occur in and around the towns of Pleasant Grove and Marcella. Several county roads were closed due to high water for a short period of time.

Ouachita County
Camden

11	1800CST 2000CST	0	0	Flash Flood
----	--------------------	---	---	-------------

Heavy rains resulted in flash flooding in Camden. Several roads in town were under water for a few hours.

ARKANSAS, East

Randolph County
Countywide

02	0945CST 1100CST	0	0	1K	Flash Flood
----	--------------------	---	---	----	-------------

Several roads became impassable due to flooding.

ARKANSAS, Northwest

NONE REPORTED.

ARKANSAS, Southeast

NONE REPORTED.

ARKANSAS, Southwest

NONE REPORTED.

CALIFORNIA, Extreme Southeast

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CALIFORNIA, North Central

NONE REPORTED.

CALIFORNIA, Northeast

El Dorado County

Meeks Bay **04** **1340PST** **0** **0** **Hail (1.00)**
One inch hail reported near Meeks Bay by U.S. Coast Guard.

Plumas County

Beckwourth **04** **1530PST** **0** **0** **Hail (1.00)**
Reported by spotter.

CALIFORNIA, Northwest

Humboldt County

3 SW Weott **03** **0700PST** **0** **0** **Wildfire**
30 **1159PST**
Honeydew/Canoe Complex

Mendocino County

10 NE Covelo **03** **0700PST** **0** **0** **Wildfire**
12 **1200PST**
Covelo Complex

Trinity County

4 E Del Loma **03** **0700PST** **0** **0** **Wildfire**
22 **1200PST**
Loma Fire

Lightning sparked numerous fire across Humboldt, Trinity, and Mendocino Counties. The fires grew rapidly in the dry, windy conditions. Over 50 total fires were ignited. By September 30, approximately 26,000 acres were burned. The largest fire was the Honeydew/Canoe Complex near Weott with 22,000 acres burned at the end of the month. The Loma Fire burned 3740 acres and was contained on September 22. The Covelo Complex near Covelo burned 240 acres and was contained on September 12. At the end of September, only the Honeydew/Canoe Complex was not yet fully contained

Trinity County

8 E Forest Glen **04** **1640PST** **0** **0** **Hail (0.75)**
1650PST

CALIFORNIA, South Central

Mariposa County

25 N Yosemite Vlg **01** **0000PST** **0** **0** **Wildfire**
30 **2359PST**

The Kibbee Complex fire, having started July 20th by lightning, burned through the month of September as a resource burn. By the end of the month it had reached 9,230 acres and had an accumulated cost of \$2M.

Tulare County

14 E Wilsonia **01** **0000PST** **0** **0** **Wildfire**
30 **2359PST**

The Kaweah-Kern Complex of fires were essentially started July 28th and allowed to continue to burn as resource fires through the month of September. Fires within this complex included Williams, West Kern, Giant, Slide Bluffs, Bubbs, West Clover, High Bridge, East Fork, West Timber, Tar Gap 1, Tar Gap 2, Fry Pan, Soda Springs, and Paradise 2. Acreage burned: 5790 acres in Sequoia-Kings Canyon National Park; 2245 acres in the Sequoia National Forest; and, 435 acres in the Inyo National Forest. As of September 30th, the cost was \$530.2K.

Mariposa County

2 N Yosemite Vlg **01** **0000PST** **0** **0** **Wildfire**
30 **2359PST**

The Duncan Complex Fire was ignited by lightning in July, and allowed to continue to burn through September as a resource burn. By the end of September it had consumed 1284 acres at an accumulated cost of \$100K.

Kern County

1 S Edwards Afb to **02** **1650PST** **0** **0** **1K** **Thunderstorm Wind (G46)**
3 N Edwards Afb **1715PST**

Tulare County

Johnsondale to **02** **2200PST** **0** **0** **Lightning**
California Hot Spgs **2300PST**

Tulare County

Sequoia National Par **03** **0000PST** **0** **0** **Lightning**
0600PST

A large amount of convective activity developed in the Kern Desert areas late in the afternoon of the 2nd. Spotter reports indicated at least a couple of microbursts in and around Edwards AFB just before 5 PM PST as some minor damage was reported in Rosamond and strong, gusty winds occurred later at meso-net sites northwest and north of Edwards. Nearly 50 lightning strikes were reported as thunderstorm activity moved from the Kern Deserts into the Kern Mountains and Tulare County Mountains by late evening. Over 14

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CALIFORNIA, South Central

fires were started by lightning strikes on the 2nd and 3rd of September in the Sequoia-Kings National Park area of the Tulare County Mountains.

Madera County

8 SW Mammoth Moun	03	0000PST			0	0	64K		Wildfire
	30	2359PST							

The Cargyle Complex Fire was ignited by lightning on the 3rd and allowed to burn through the month for resource benefits. By the end of the month it had burned 717 acres at a cost of \$64K.

Mariposa County

7 NW Yosemite Vlg	03	1012PST			0	0			Heavy Rain
		1712PST							

Fresno County

5 N Huntington Lake to	03	1453PST			0	0			Heavy Rain
7 N Huntington Lake		1515PST							

From widespread afternoon thunderstorm activity over the Southern Sierra Nevada and Tulare County Mountains, locally heavy rain showers occurred the afternoon of the 3rd. From White Wolf RAWS 1.86" of rain occurred within a 6 hour time period. A strong thunderstorm developed north of Huntington Lake but no damage was reported in this remote area.

Kern County

Bodfish to	03	1636PST			0	0	10K		Heavy Rain
4 SE Weldon		2100PST							

Kern County

Democrat Spgs	03	1646PST			0	0			Lightning
		1715PST							

Kern County

Lake Isabella	03	1646PST			0	0	15K		Hail (0.01)
		1715PST							

CAZ097

Tulare Cty Mtns	03	1729PST			0	0			Landslide
		2018PST							

During the late afternoon of the 3rd convective activity brought a variety of threatening weather to the Lake Isabella area of Kern County and northward into the Tulare County Mountains. A severe thunderstorm with radar reflectivity of 70 dBz and a VIL of 53 hailed and damaged cars at the town of Lake Isabella. Dry lightning strikes occurred to the west of town near Democrat and rock slides occurred onto the road north of Kernville due to locally heavy rains. Urban and small stream flooding caused damage to a house in Bodfish, water ponded uniformly 2 inches deep in Lake Isabella, and roads were closed southeast of Weldon due to water on the roadway.

Tulare County

45 E Porterville	03	1700PST			0	0			Wildfire
	30	2359PST							

The Albanita/Hooker Fire in Sequoia National Forest was lightning ignited on the 3rd. It burned 175 acres by the 30th as it was allowed to burn for resource benefits. No injuries were reported nor was any structure lost.

Tulare County

40 E Visalia	05	1200PST			0	0	824K		Wildfire
	30	2359PST							

Homers Nose 2 Fire in the Sequoia-Kings Canyon Park was lightning ignited on the 5th and allowed to burn throughout the month. As of the 30th, it had consumed 230 acres at a cost of \$824K with no fatalities or injuries nor structures lost.

CAZ098

Indian Wells Vly	09	1700PST			0	0	1K		Strong Wind
		2200PST							

Gusty wind swept over the Kern Desert areas on the 9th with wind speeds commonly reported 35 to 45 MPH but higher speeds over 50 MPH did occur during the evening hours.

Tulare County

60 ESE Porterville	15	1121PST			0	0	460.6K		Wildfire
	17	1600PST							

The Michael Fire had an unknown ignition near Chimney Peak in southeast Tulare County. It consumed 388 acres at a cost of \$460K. No fatalities occurred nor were structures lost.

CALIFORNIA, Southeast

San Bernardino

County

Twenty Nine Palms	04	1430PST			0	0	50K		Hail (0.01)
		1445PST							

A severe thunderstorm produced golf ball sized hail in Twentynine Palms.

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
Killed									
Injured									
Property									
Crops									
Character of Storm									
CALIFORNIA, Southwest									
Riverside County									
3 N Moreno Valley	02	1030PST 1248PST			0	0			Wildfire
A brush fire burned 10 acres in the northern edge of Moreno Valley before being fully contained. Several residences were threatened but no property damage or injuries occurred.									
San Bernardino County									
1 NW Yucca Vly to 1 SE Lerne Vly Soggy Dry	02	1318PST 1414PST			0	0	60K		Flash Flood
Several roads underwater and/or washed out. Washes running full.									
Riverside County									
13 SW Palm Spgs	02	1415PST 1500PST			0	0			Flash Flood
One channel of Palm Canyon Wash flooded.									
San Diego County									
Descanso	02	1425PST 1430PST			0	0			Hail (1.25)
San Diego County									
2 NE Santa Ysabel to 8 W Julian	02	1425PST 1430PST			0	0	50K		Flash Flood
Heavy rain caused flooding and mudslides across Highway 79 and Mesa Grande Road. At about the same time, large hail was observed farther south in Descanso.									
San Diego County									
2.5 SE Santa Ysabel to 3.5 E La Mesa	02	1455PST 1505PST			0	0			Lightning
Lightning started six separate fires, but fire fighters and heavy rains put them out before any major damage occurred									
San Diego County									
2 W La Mesa	02	1530PST 1600PST			0	0	10K		Flash Flood
West bound lanes of Interstate 8 near College Avenue were flooded.									
Riverside County									
5 NE Indio	02	1736PST 1810PST			0	0			Flash Flood
Large flood coming from hills, heading toward Indio Hills subdivision.									
Riverside County									
3 E (Ral)Riverside Mun	03	1106PST 1200PST			0	0	50K		Wildfire
A brush fire burned power lines and self-storage units along Highway 91just north of Central Avenue.									
San Bernardino County									
1.5 S Phelan	03	1318PST			0	0			Heavy Rain
Visibility near zero, standing water on Highway 138.									
San Diego County									
Camp Pendleton	03	1400PST 1800PST			0	0			Wildfire
A brush fire burned 40 acres at Camp Pendleton. No structures were threatened and no injuries were reported.									
CAZ055									
San Bernardino County Mountains	04	1145PST 1210PST			0	0	80K		Landslide
Heavy rains over the previous three days helped saturate the soil. A thunderstorm moving along the ridge top dropped another 0.60 inches of rain that triggered a landslide. Observers stated it took about 20 minutes for the landslide to make it from the top of the mountain to the valley floor. About 300 feet of road were covered with four feet of mud and large boulders. Heavy downpours in Big Bear City also caused localized flooding.									
San Bernardino County									
.5 S Phelan to 1.5 S Phelan	04	1230PST 1300PST			0	0	20K		Lightning
San Bernardino County									
Yucca Vly to 1 W Phelan	04	1330PST 1410PST			0	0	10K		Flash Flood
Flash flooding was observed in Yucca Valley and Phelan. Lightning from the same thunderstorms also struck two power poles and									

Storm Data and Unusual Weather Phenomena

September 2003

									September 2003
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
CALIFORNIA, Southwest									
started small brush fires in Phelan.									
Riverside County									
Banning to 4.5 E Hemet	04	1249PST 1339PST			0	0	30K		Flash Flood
Heavy rain and 0.25-0.5 inch diameter hail fell from thunderstorms over the San Jacinto Mountains. Flash flooding occurred on roads leading into Banning and east Hemet.									
San Diego County									
Pine Vly to Descanso	04	1319PST 1400PST			0	0	30K		Flash Flood
Heavy rain from thunderstorms, flash flooding reported in Pine Valley.									
San Diego County									
Campo to Julian	04	1400PST 1500PST			0	0	20K		Flash Flood
San Diego County									
Campo to Julian	04	1400PST 1500PST			0	0			Hail (0.75)
Dime size hail, flash flooding, and mud slides observed along Highway S2.									
Riverside County									
12.5 E Anza to Pine Cove	04	1403PST 1500PST			0	0	100K		Flash Flood
Thunderstorms formed over the west side of the San Jacinto Mountains and moved slowly north. Highways 74 and 243 were covered with mud and debris from flash flooding. Nine residences and business in Pine Cove had water damage. Lightning also started a small brush that burned about a half acre below Pine Cove before it was contained.									
San Diego County									
Julian to Santa Ysabel	04	1430PST 1501PST			0	0			Hail (0.75)
CAZ062									
San Diego County Deserts									
	04	1440PST 1450PST			0	0			Dust Storm
Large hail was observed near Julian and at Santa Ysabel. Downdraft winds of 40 mph and blowing sand were observed near Borrego Springs.									
San Diego County									
Santa Ysabel to Julian	04	1455PST 1502PST			0	0			Flash Flood
Roads flooded in Santa Ysabel and along Sunrise Highway in Julian.									
San Diego County									
1 NE Santa Ysabel to 4 NE Borrego Spgs	04	1704PST 1851PST			0	0	60K		Flash Flood
Flash floods covered main roads and highways with mud and water from Santa Ysabel to east of Borrego Springs.									
Riverside County									
Anza	05	1235PST 1315PST			0	0	20K		Flash Flood
Extensive flooding was reported in and around Anza after 2.5 inches of rain fell in 65 minutes. Wind gusts were measured at 50 mph, and 0.5 inch diameter hail was also observed.									
San Diego County									
3 E Palomar Mtn to Warner Spgs	05	1330PST 1400PST			0	0			Flash Flood
Flooding was observed between Palomar Mountains and Warner Springs.									
San Bernardino County									
5 NE Highland to 1.5 SE Lake Arrowhead	05 10	1404PST 1404PST			0	9	200K		Wildfire
Named the Bridge fire, it burned 1352 acres before being fully contained. It forced the evacuation of the towns of Fredalba, Smiley Park, Nob Hill, Enchanted Forest, and part of Running Springs, affecting more than 1000 residents. The main highways, 330 and 18, were closed for several days. Property damage was contained to guardrails, power lines, and traffic signs along the highway corridors, in addition to one out building. Cost of fighting the fire were in excess of \$2.3 million dollars.									
San Bernardino County									
2 SW Loma Linda to 2 S Loma Linda	12 13	1500PST 0100PST			0	0			Wildfire
A brush fire consumed 175 acres before being controlled. No homes or structures were endangered and no injuries were reported.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CALIFORNIA, Southwest

San Bernardino County

6 S Hesperia **17** **1240PST** **0** **0** **Wildfire**
1445PST

A brush fire consumed 40 acres and briefly threatened several homes in the Oak Hills subdivision of Hesperia. Lack of winds helped firefighters contain the blaze in a short period of time.

Riverside County

1 NW Beaumont to **23** **0928PST** **0** **0** **Wildfire**
2 W Beaumont **1100PST**

A brush fire, combined with east winds gusting bear 30 mph, burned 110 acres in a dry wash. Homes were threatened along Elm Avenue near Oak Valley Parkway and in Three Rings Ranch Project.

CALIFORNIA, Upper

Modoc County Countywide

03 **1200PST** **0** **0** **Lightning**
2045PST

Siskiyou County Countywide

03 **1200PST** **0** **0** **Lightning**
2045PST

See below.

A Red Flag Warning was issued for all of southern Oregon due to a line of thunderstorms approaching from the south containing dry lightning. The line weakened before arrival, but a number of strikes did occur over northern California. However, verification was marginal as the lightning strikes may have not been widespread enough to verify the Red Flag Warning

Siskiyou County Countywide

12 **0632PST** **0** **0** **Wildfire**
14 **1105PST**

See below.

A Red Flag Warning was issued effective at the above times for fire weather zones 280, which includes western Siskiyou county. Strong offshore winds were expected. The strong winds occurred on the first night...but relative humidity recoveries were high enough not to verify the warning in most areas. The second night the winds abated but the recoveries were poor.

The Slater Butte RAWs and the Collins Baldy RAWs verified the warning on both nights. This was a strong offshore event and a critical fire weather pattern, so the warning was justified as far as the fire weather agencies were concerned.

CAZ084>085

Northeast Siskiyou And Northwest Modoc Counties - Modoc County

15 **1452PST** **0** **0** **Frost/Freeze**
16 **0800PST**

See below.

A Frost Warning was issued for the above zones the night of 09/15-16. Reported low temperatures ranged from 34 to 47...some some local frost likely did form this night...but not widespread frost.

CAZ084>085

Northeast Siskiyou And Northwest Modoc Counties - Modoc County

16 **0300PST** **0** **0** **Frost/Freeze**
17 **0800PST**

See below.

A Frost Warning was issued for the above zones the night of 09/16-17. Reported low temperatures ranged from 22 to 31...so a killing frost likely occurred this night.

CAZ084>085

Northeast Siskiyou And Northwest Modoc Counties - Modoc County

17 **1445PST** **0** **0** **Frost/Freeze**
18 **0800PST**

See below.

A Frost Warning was issued for the above zones the night of 09/17-18. Reported low temperatures ranged from 24 to 37...so a killing frost likely occurred this night.

Siskiyou County Countywide

21 **0635PST** **0** **0** **Wildfire**
23 **0610PST**

See below.

A Red Flag Warning was issued effective at the above times for Fire Weather zone 280, which covers Western Siskiyou county. This warning verified at several RAWs stations in the area, including Slater Butte, Blue Ridge, and Collins Baldy.

CALIFORNIA, West South Central

Los Angeles County

7 ESE Pearblossom **03** **1300PST** **0** **0** **Flash Flood**
1330PST

Strong monsoonal thunderstorms moved across the Antelope Valley, producing heavy and flash flooding. Along Largo Vista Road, seven miles ESE of Pearblossom, flash flooding was reported. Due to the flash flooding, one vehicle was stranded and abandoned.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CALIFORNIA, Western

NONE REPORTED.

CARIBBEAN SEA AND TROPICAL ATLANTIC

Cp Fear To Little R

Inlet Nc Out 20Nm

2 SW Shallotte Inlet to	01	1340EST			0	0			Waterspout
1 SW Shallotte Inlet		1350EST							

Brunswick 911 reported a waterspout a mile offshore of Ocean Isle Beach. The waterspout moved northeast...parallel to shore before dissipating.

Jupiter Inlet To Deerfield Beach Fl 20 To 60Nm

5 NE Boca Raton	05	1300EST			0	0			Waterspout
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The Beach Patrol saw a large waterspout in the Atlantic about two and one half miles offshore of Delray Beach. The waterspout moved slowly west before dissipating about one half mile offshore.

Deerfield Beach To Ocean Reef Fl

17 SE Port Everglades	08	1110EST			0	0			Waterspout
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A pilot saw a waterspout in the Atlantic.

Jupiter Inlet To Deerfield Beach Fl 20 To 60Nm

10 SE Port Of Palm Beach	13	0900EST			0	0			Waterspout
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A pilot and the public reported a waterspout in the Atlantic about 5 miles east of Lake Worth

Jupiter Inlet To Deerfield Beach Fl 20 To 60Nm

12 NNE Boca Raton	19	0756EST			0	0			Waterspout
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The public reported a waterspout in the Atlantic one mile east of Boynton Beach.

Jupiter Inlet To Deerfield Beach Fl 20 To 60Nm

15 ESE Port Of Palm Beach	19	1524EST			0	0			Waterspout
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A SKYWARN spotter saw a waterspout in the Atlantic 15 miles offshore.

Carib Waters E Cst Pr Thru Usvi

Christiansted Harbor	21	1213AST 1227AST			0	0			Waterspout
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A waterspout was reported by a pilot flying in the vicinity of St Thomas.

Jupiter Inlet To Deerfield Beach Fl 20 To 60Nm

15 E Boca Raton	25	0800EST			0	0			Waterspout
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A waterspout was seen in the Atlantic.

St Augustine To Flagler Beach Fl Out 20Nm

5 ESE Flagler Beach	26	1025EST 1035EST			0	0			Waterspout
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Spotted by Flagler County Sheriffs Officer, nearly stationary

Jupiter Inlet To Deerfield Beach Fl 20 To 60Nm

10 E Port Of Palm Beach	26	1657EST			0	0			Waterspout
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A SKYWARN spotter saw a waterspout in the Atlantic 10 miles offshore Palm Beach Shores.

Deerfield Beach To Ocean Reef Fl

6 SE Government Cut	29	1700EST			0	0			Marine Tstm Wind
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Fowey Rocks C-Man measured a thunderstorm wind of 35 knots.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CARIBBEAN SEA AND TROPICAL ATLANTIC

Jupiter Inlet To
Deerfield Beach Fl 20
To 60Nm

3 E Port Of Palm Beach 30 1703EST 0 0 Waterspout

A waterspout was seen in the Atlantic offshore Palm Beach.

COLORADO, Central and Northeast

Clear Creek County
Idaho Spgs

03 1315MST 1500MST 0 0 0 Flash Flood

Very heavy rain washed out parts of Virginia Canyon Road near Idaho Springs. Up to 4 feet of mud reportedly washed down the road during the storm. Several vehicles were stuck on the road. In Idaho Springs, several streets including the main street, were also buried by mud and gravel. Some buildings in town also experienced minor flooding, including the basement of the town library and the police station.

COLORADO, East Central

NONE REPORTED.

COLORADO, South Central and Southeast

Fremont County
8 ESE Penrose to
10 ESE Penrose

05 1647MST 1703MST 2 75 0 0 Tornado (F0)

A weak tornado over open country of extreme eastern Fremont county caused no known damage. It passed into extreme western Pueblo county.

Pueblo County
10 WNW Pueblo West to
9 WNW Pueblo West

05 1703MST 1710MST 1 75 0 0 Tornado (F0)

A weak tornado over open country of extreme western Pueblo county caused no known damage. It was the tornado that originated in extreme eastern Fremont county.

COLORADO, West

COZ001>014-
017>023

Lower Yampa River Basin - Central Yampa River Basin - Roan And Tavaputs Plateaus - Elkhead And Park Mountains - Upper Yampa River Basin - Grand Valley - Debeque To Silt Corridor - Central Colorado River Basin - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys - Central Gunnison And Uncompahgre River Basin - West Elk And Sawatch Mountains - Flattop Mountains - Upper Gunnison River Valley - Uncompahgre Plateau And Dallas Divide - Northwestern San Juan Mountains - Southwestern San Juan Mountains - Paradox Valley / Lower Dolores River Basin - Four Corners / Upper Dolores River Basin - Animas River Basin - San Juan River Basin

01 0000MST 2359MST 0 0 Drought

Precipitation across western Colorado during the first half of the month resulted in some drought relief across southwest Colorado and portions of northwest Colorado. However, severe to extreme drought conditions continued through the month across western Colorado. See the October 2003 Storm Data publication for a continuation on this drought situation.

San Miguel County
9 N Egnar

04 1500MST 1530MST 0 0 Heavy Rain

Very heavy rain caused dry washes to run full for 15 to 30 minutes.

Montrose County
7 SE Montrose

05 1620MST 1640MST 0 0 Heavy Rain

0.75 of an inch of rain fell in 20 minutes and resulted in minor flooding.

Montezuma County
Stoner

06 1230MST 1240MST 0 0 Heavy Rain

0.50 of an inch of rain fell within 10 minutes and resulted in minor flooding.

La Plata County
6 N Durango to
10 N Durango

06 1305MST 1500MST 0 0 Flash Flood

Runoff from heavy rain over the Missionary Ridge Fire burned area resulted in 6 to 10 inches of water flowing across portions of Highway 250. A rollover vehicle accident resulted from debris being washed onto the road.

Pitkin County
10 NNW Redstone to
10 N Redstone

06 1600MST 1700MST 0 0 Heavy Rain

Heavy rainfall resulted in a mud flow which covered the North Thompson Creek Road. A truck got stuck in the mud. Due to safety

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
COLORADO, West									
concerns, road crews were unable to begin clearing the road until more than 24 hours later.									
Garfield County 1 N Carbondale	06	1630MST 1635MST			0	0	2K		Heavy Rain
Heavy rainfall resulted in two rock slides which blocked the intersection of Highway 82 and Highway 133. The largest boulders that landed on the road were up to 3 feet in diameter.									
Mesa County Mesa	08	1805MST 1810MST			0	0			Hail (0.75)
Garfield County Glenwood Spgs	08	1825MST 1835MST			0	0			Hail (0.75)
COZ008		Central Colorado River Basin							
	08	1900MST 1905MST			0	0			Landslide
Heavy rain caused mud slides onto Interstate 70 about eight to ten miles east of Glenwood Springs between mile markers 124 and 126. Both east bound and west bound lanes of the interstate were closed for a couple of hours.									
La Plata County La Plata Co Arpt	09	0700MST 1900MST			0	0			Heavy Rain
A potent storm system brought copious amounts of moisture to southwest Colorado resulting in near record rainfall across portions of La Plata County. The AWOS at the Durango-La Plata County Airport recorded 3.58 inches of rain in the 12 hour period from 0700 to 1900. Minor flooding occurred 2 miles northeast of the airport near the intersection of Highway 172 and County Road 311.									
Montezuma County 24 SW Cortez	09	1030MST 1100MST			0	0			Flash Flood
Two cars became stuck in deep mud flows as flash flooding inundated Highway 491 near mile marker 1.									
La Plata County 9 N Durango to 7 N Bayfield	09	1115MST 2300MST			0	0			Flash Flood
A potent storm system brought copious amounts of rainfall to much of La Plata County resulting in widespread flash flooding and debris flows in and around the Missionary Ridge Fire burned area. County Road 250 was closed due to mud and debris flows, up to 9 feet deep in some places. Water and debris flows estimated at 1800 CFS occurred in Stevens Creek. Flash flooding near Freed Canyon resulted in debris flows 3 feet deep. Debris flows 1 to 2 feet deep occurred near Haflin Creek. County Road 501 was also closed due to mud and debris flows.									
COZ019		Southwestern San Juan Mountains							
	09 10	1200MST 0600MST			0	0			Winter Weather/Mix
The Pacific weather system that brought heavy rainfall to the lower elevations of southwest Colorado also resulted in the first significant snow event of the season for the southwest San Juan Mountains. Snowfall amounts of 4 to 10 inches were reported above the 9000 foot level where tire chain laws went into effect.									
La Plata County 9 W Durango	09	1300MST 2300MST			0	0			Flash Flood
Water up to 12 inches deep flowed across roads in the area.									
La Plata County Hesperus	09	1300MST 1400MST			0	0			Heavy Rain
Heavy rainfall resulted in street flooding in the Hesperus area.									
San Miguel County 2 SE Placerville	09	1530MST 1730MST			0	0			Flash Flood
Heavy rain caused a rapid flow of water and debris which deposited mud 10 inches deep along a 30 foot stretch of Highway 145 near mile marker 82.									
Montezuma County Yellow Jacket to Pleasant View	09	1735MST 1745MST			0	0	12K	100K	Hail (1.50)
Large hail destroyed many acres of crops. The hail also damaged many fruit trees, as well as rural houses and farm buildings.									
Dolores County 8 S Dove Creek to 7 SW Dove Creek	09	1750MST 1800MST			0	0	5K	30K	Hail (1.00)
Large hail destroyed several hundred acres of pinto beans. Rural houses and farm buildings were also damaged.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
<u>COLORADO, West</u>							
Montezuma County Cortez to 5 SW Cortez	09	1900MST 2300MST			0 0	10K	Flash Flood
Flash flood waters one foot deep flowed through streets in Cortez. And a road at the Cortez Municipal Airport was washed out.							
Montezuma County 8 W Cortez	09	1900MST 2300MST			0 0	20K	Flash Flood
Flash flood waters washed out several roads in the McElmo Canyon area.							
Pitkin County 6 N Redstone	09	2038MST 2043MST			0 0		Hail (1.00)
Mesa County 1 NW Fruita	10	0358MST 0408MST			0 0		Hail (0.88)
Mesa County Redlands	10	0400MST 0405MST			0 0		Hail (0.88)
Garfield County Glenwood Spgs	10	0630MST 0730MST			0 0		Flash Flood
A strong storm system brought moderate to heavy rain to eastern Garfield County resulting in mud and debris flows onto Highway 82 near the Glenwood Springs city limits. Mud flows also occurred in the Mitchell Creek area 3 miles northwest of Glenwood Springs.							
COZ004-009>010-012>013-018	10	0830MST			0 0		Elkhead And Park Mountains - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys - West Elk And Sawatch Mountains - Flattop Mountains - Northwestern San Juan Mountains
	11	0330MST					Winter Weather/Mix
A strong winter-like Pacific storm system brought the first significant snow event of the season for many mountain areas above the 8500 foot level in western Colorado. Widespread snowfall accumulations ranged from 3 to 10 inches with locally higher amounts. The Wilson Range southwest of Telluride received 18 inches. And 12 to 13 inches of new snow were reported on Red Mountain Pass, Imogene Pass, and at Gothic near Crested Butte.							
Mesa County Fruitvale	10	1244MST 1254MST			0 0		Hail (0.88)
Mesa County 5 N Mack	10	1300MST 1308MST			0 0	10K	Hail (1.00)
Mesa County 5 N Fruita	10	1330MST 1430MST			0 0		Heavy Rain
Heavy rainfall resulted in minor flooding.							
Mesa County 5 N Fruita	10	1338MST 1348MST			0 0	10K	Hail (1.00)
Mesa County Clifton	10	1405MST 1415MST			0 0		Hail (0.75)
Mesa County 4 ENE Fruita to 6 NNE Fruita	10	1500MST 1600MST			0 0		Heavy Rain
Heavy rains resulted in minor flooding in the Adobe Creek Subdivision and along the East Salt Creek. Water inundated corrals on the west bank of the East Salt Creek and water was up to the bottom of a bridge on "O" Road, just west of 19 Road. One inch of water flowed into a home near the intersection of 19 Road and "O" Road.							
COZ014	12	0400MST 0800MST			0 0		Upper Gunnison River Valley Frost/Freeze
A strong winter-like cold front ushered in an unseasonably cold air mass which resulted in widespread freezing temperatures in the upper Gunnison River Valley. Automated sensors and cooperative observers reported minimum temperatures that ranged from the lower 20s to 32 degrees.							
COZ001>002-005-007>008-021-023	14	0100MST 0800MST			0 0		Lower Yampa River Basin - Central Yampa River Basin - Upper Yampa River Basin - Debeque To Silt Corridor - Central Colorado River Basin - Four Corners / Upper Dolores River Basin - San Juan River Basin Frost/Freeze
A cold air mass settled over western Colorado resulting in widespread freezing temperatures across many of the valleys. Automated							

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

COLORADO, West

**COZ003-006>008-
011-017-020**

and cooperative observer reports indicated minimum temperatures ranging from the mid 20s to 32 degrees.

Roan And Tavaputs Plateaus - Grand Valley - Debeque To Silt Corridor - Central Colorado River Basin - Central Gunnison And Uncompahgre River Basin - Uncompahgre Plateau And Dallas Divide - Paradox Valley / Lower Dolores River Basin

17 1053MST 0 0 14K Strong Wind
1800MST

Strong winds developed across western Colorado as a dry cold front moved through the area. A 60 foot tall tree with a 4 foot diameter trunk was toppled by the wind in the Grand Valley. Minor wind damage also occurred in other areas

CONNECTICUT, Northeast

Hartford County

Berlin to 28 0900EST 0 0 25K Flash Flood
Hartford 1800EST

Significant urban flooding affected central Hartford County, after nearly 4 inches of rain fell in a few hours. Several cars were stranded in Berlin and West Hartford, and Willow Brook rose out of its banks in New Britain, flooding a nearby park.

CONNECTICUT, Northwest

Litchfield County

Salisbury 23 0909EST 0 0 Thunderstorm Wind (G60)

Litchfield County

Washington 23 0931EST 0 0 Thunderstorm Wind (G60)

A strong cold front produced a line of showers and thunderstorms across northwestern Connecticut during the morning of September 23. One of the storms became severe as it moved across Litchfield County. Thunderstorm winds brought down numerous trees and power lines on Whitehollow Road in the town of Salisbury. About twenty minutes later, more powerlines were knocked down on Baldwin Hill Road in the town of Washington.

CONNECTICUT, Southern

NOT RECEIVED.

DELAWARE

New Castle County

North Portion 15 0543EST 0 1 16.1M Flash Flood
16 2234EST

Remnant moisture from Tropical Storm Henri produced copious amounts of rain during the early morning of the 15th across northern New Castle County and hit Mill Creek Hundred in the northwest part of the county the hardest. Thunderstorms with torrential downpours moved from south to north across the same areas and produced one to ten inches of rain across the region with the heaviest amounts around Hockessin. The worst flood damage occurred in the Glenville area of Mill Creek Hundred where 194 homes suffered flood damage. Numerous people were rescued from trapped vehicles. People were rescued from their flooded homes, including one person who was rescued from his roof. The Red Clay Creek at Wooddale had the highest recorded crest on record when it crested at 17.27 feet at 1230 p.m. EDT on the 15th. Flood stage is 5.5 feet. Farther downstream at Stanton, the creek rose above the gage house. The White Clay Creek at Delaware Park had its 4th highest crest of record when it crested at 16.78 feet at 345 p.m. EDT on the 15th. Flood stage is 13 feet. Other gage and rivers that flooded included the Christina River at Coochs Bridge (crest of 11.57 feet at 130 p.m. EDT on the 15th. Flood stage is 9 feet.) and the Brandywine Creek at Wilmington (crest of 12.73 feet at 845 p.m. EDT on the 15th, Flood stage is 11 feet.). Storm totals included 9.02 inches in Hockessin.

DEZ004

Delaware Beaches

18 0600EST 0 0 0 Heavy Surf/High Surf
20 1800EST

Sussex County

Countywide 18 1100EST 0 0 Heavy Rain
2300EST

Kent County

Countywide 18 1200EST 0 0 Heavy Rain
19 0000EST

DEZ001>004

New Castle - Kent - Inland Sussex - Delaware Beaches

18 1300EST 0 0 Storm Surge
19 1600EST

New Castle County

Countywide 18 1300EST 0 0 Heavy Rain
19 0100EST

DEZ002>004

Kent - Inland Sussex - Delaware Beaches

18 1500EST 0 0 17.8M Tropical Storm
19 0500EST

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

DELAWARE

DEZ001

New Castle

18 1600EST

19 0500EST

0

0

9.5M

High Wind (G50)

New Castle County North Portion

18 2027EST

19 0628EST

0

0

Flash Flood

Tropical Storm Isabel caused tidal flooding up Delaware Bay, heavy rain and strong power outage producing winds. Isabel made landfall as a hurricane near Drum Inlet, North Carolina around 100 p.m. EDT on the 18th and weakened as it tracked farther inland. At one time in its life cycle, it was a powerful Category 5 hurricane when it was north of the Leewood Islands. Isabel's track took it west of Chesapeake Bay and was able to funnel water into the bay. This caused flooding along coastal areas all the way into New Castle County. Rivers and streams in New Castle County flooded from two fronts: from the heavy rain inland and also from the storm surge. The tide at Reedy Point reached 8.66 feet above mean lower low water at 506 a.m. EDT on the 19th. The surge was about 5 feet. The surge funneled up the bay and was lower and occurred earlier close to the coast. The highest tide at Lewes (Sussex County) was 6.51 feet above mean lower low water at 324 p.m. EDT on the 18th. The heavy rain did not coincide with the tidal flooding and occurred mainly from the afternoon of the 18th into the early morning of the 19th. Nevertheless, runoff from streams in New Castle County were slowed because of the incoming storm surge. While tides barely reached minor tidal levels along the ocean, the wave action on top of the tide caused beach erosion. Dunes were breached on the ocean front south of South Bethany and water overwashed onto Delaware State Route 1 in several locations. Winds gusted up to 70 mph and caused numerous trees, tree limbs and power lines to be knocked down. This was one of the worst power outage events in history for Conectiv Energy.

The Christina River at Coochs Bridge (New Castle County) was above its 9 foot flood stage from 927 p.m. EDT on the 18th through 612 a.m. EDT on the 19th. It crested at 11.38 feet at 115 a.m. EDT on the 19th. The Red Clay Creek at Wooddale was above its 5.5 foot flood stage from 106 a.m. EDT through 728 a.m. EDT on the 19th. It crested at 5.87 feet at 430 a.m. EDT on the 19th. Peak wind gusts included 70 mph at the Pilot Tower (Sussex County), 62 mph in Lewes (Sussex County), 61 mph at the Dover Air Force Base (Kent County), 60 mph in Georgetown (Sussex County) and 53 mph at both Bear (New Castle County) and the New Castle County Airport. Storm totals included 1.88 inches in Greenwood (Sussex County), 1.74 inches in Georgetown (Sussex County), 1.46 inches at the New Castle County Airport, 1.35 inches in Milford (Kent County) and 1.00 at the Dover Air Force Base (Kent County).

Kent County Dover

23 0623EST

0

0

Thunderstorm Wind (G52)

A powerful line of severe thunderstorms uprooted trees and damaged a fence in Dover.

New Castle County North Portion

28 0000EST

0200EST

0

0

Flash Flood

Thunderstorms with heavy rain dropped a Doppler Radar storm total estimate of 3 to 4 inches across north central New Castle County and caused flooding of smaller streams.

DISTRICT OF COLUMBIA

NOT RECEIVED.

FLORIDA, East Central

Volusia County Port Orange

14 0100EST

0

0

250K

0

Lightning

Lightning struck a warehouse in Port Orange. The resulting fire caused \$250 thousand in damage.

Indian River County Wabasso

20 0950EST

1

4

0

0

Lightning

A 49 year old woman was struck and killed by lightning while standing on a soccer field. About 20 other people were knocked to the ground by the strike. Four other people were transported to a local hospital. This was the first lightning ground stroke of the day in the area as showers began moving inland from the Atlantic.
F49BF

St. Lucie County 5 S Ft Pierce

25 1320EST

0

1

0

0

Lightning

A power plant worker was injured by lightning while in a working basket on top of a crane on a utility truck.

Lake County Eustis

25 1400EST

0

1

8K

0

Lightning

A female student was burned by a piece of power transformer on top of a pole that was struck by lightning. Pieces of the shattered transformer flew through an open window on a school bus and landed on the student's leg.

Seminole County Lake Mary

25 1515EST

1

2

0

0

Lightning

A 22 year old man was killed by lightning while fishing under a gazebo at the end of a short pier in a lake. Two teen age boys who were also in the gazebo when the lightning struck were injured. M22OU

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

FLORIDA, East Central

St. Lucie County

Port St Lucie	25	1655EST 1900EST			0	0	20K	0	Flash Flood
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About six inches of rain fell in the Port St. Lucie area flooding major roadways and stalling cars.

FLORIDA, Extreme Southern

NONE REPORTED.

FLORIDA, Northeastern

Nassau County

5 SSE Amelia City	13	1600EST			1	0			Rip Current
--------------------------	-----------	----------------	--	--	----------	----------	--	--	--------------------

Tourist drowned when caught in rip current at an unguarded beach. Rough surf from Hurricane Isabel was developing and the Jacksonville surf forecast indicated a "moderate risk of rip currents" for the day with increasing surf later in the week. Nassau County Beach Patrol reported 6 rescues due to rip currents.
M47IW

FLZ024

Nassau	15	1530EST			0	0			Heavy Surf/High Surf
	18	1300EST							

High Surf and long period swell from Hurricane Isabel. Breakers of 7 to 10 feet reported with Nassau County beaches closed to swimming.

FLZ038

Flagler	15	1530EST			0	0			Heavy Surf/High Surf
	18	1300EST							

High Surf and long period swell from Hurricane Isabel. General breakers of 7 to 10 feet reported with occasional 12 to 15 foot sets. Flagler Beach Pier was closed with boards broken off in the seaward section as waves broke over the end of the pier. The pier was reported to be "wobbling" when it was closed.

FLZ033

St. Johns	15	1530EST			0	0			Heavy Surf/High Surf
	18	1300EST							

High Surf and long period swell from Hurricane Isabel with associated beach erosion. Breakers of 7 to 10 feet with 2 to 4 feet of beach erosion reported.

FLZ025

Duval	15	1530EST			0	0			Heavy Surf/High Surf
	18	1300EST							

High Surf and long period swell from Hurricane Isabel with associated beach erosion. Breakers of 7 to 10 feet with 2 to 4 feet of beach erosion reported.

FLZ038

Flagler	29	1100EST			0	0			Astronomical High Tide
	30	2359EST							

High astronomical tide combined with a strong northeast flow led to minor coastal flooding and beach erosion. Effects were most pronounced in Flagler County but were felt from the Altamaha Sound, Georgia south to Flagler Beach, Florida.

FLORIDA, Northwest

NONE REPORTED.

FLORIDA, Southern

Broward County

Ft Lauderdale	01	1300EST			1	0			Rip Current
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A man drowned in a rip current at Fort Lauderdale Beach.
M38IW

Palm Beach County

Boca Raton	01	1730EST			2	0			Rip Current
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Two residents drowned in rip currents at an unguarded section of beach. Both persons were weak swimmers and were in 4.5 feet of water when the rip currents pulled them into deeper water.

M33IW, M31IW

Broward County

22 E Ft Lauderdale	02	1500EST			0	0	200K		Lightning
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Lightning struck a 45-foot sail boat on its way to Bimini. The lightning strike caused a fire that completely destroyed the craft. The only occupant on board was forced into the water where he suffered minor injuries before being rescued by the Coast Guard

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
FLORIDA, Southern									
Palm Beach County									
Lake Worth	04	1350EST			0	0			Funnel Cloud
A SKYWARN spotter sighted a funnel cloud just southwest of Lake Worth.									
Miami - Dade County									
Homestead	04	1515EST			0	0			Funnel Cloud
A SKYWARN spotter saw a funnel cloud near U.S. 1.									
Miami - Dade County									
Kendall	05	1200EST	1	20	0	0			Tornado (F0)
An off duty National Weather Service meteorologist playing golf on the Palmetto Golf Course, saw a tornado form near the Metro Zoo and move toward the east northeast. No damage was observed.									
Palm Beach County									
Boca Raton	05	1340EST			0	0			Funnel Cloud
A SKYWARN spotter saw a funnel cloud near I-95 and Yamato Road.									
Miami - Dade County									
11 SE Homestead Afb	12	1842EST			0	0			Funnel Cloud
Emergency Manager reported a funnel cloud over southern Biscayne Bay.									
FLZ068									
Coastal Palm Beach									
	21	0800EST			0	2			Hurricane/Typhoon
	22	2300EST							
Swells from hurricane Isabel, that was passing about 1000 miles to the east of southeast Florida, capsized a watercraft at the Boynton Beach Inlet injuring two men. A 14-year-old swimmer was rescued from high waves near Juno Beach Pier. Minor beach erosion was experienced.									
Broward County									
Hallandale	23	1140EST			0	0			Funnel Cloud
Fire-Rescue reported a funnel cloud over Hallandale Beach Boulevard.									
Broward County									
Hollywood	24	1245EST			0	1			Lightning
An 81-year-old man was seriously injured by a lightning strike as he walked down the sidewalk near Johnson Street									
Miami - Dade County									
3 W (Mia)Miami Intl	24	1550EST			0	0			Thunderstorm Wind (G50)
CBS-4 measured a thunderstorm wind gust of 58 mph at their T.V studio.									
Collier County									
West Portion	29	1000EST 2300EST			0	0	100K		Flash Flood
Glades County									
South Portion	29	1000EST 2300EST			0	0	20K		Flash Flood
Very heavy rainfall fell across southwest Florida with radar estimated amounts of 8 to 10 inches. Naples measured a record 6.99 inches. The resulting flood closed numerous roads in Collier County and washed out a road in Glades County. Numerous cars were stalled. Houses and businesses including a shopping mall suffered minor flooding damage.									
FLORIDA, West Central									
FLZ049									
Pasco									
	01	0000EST			0	0			Flood
	21	1015EST							
Cypress Creek at Worthington Gardens went above flood stage on August 2nd, crested at 10.27 feet on August 13th, and fell below flood stage on September 21st. Flood stage is 8 feet.									
FLZ060									
Sarasota									
	01	0000EST			0	0			Flood
	16	2355EST							
The Myakka River at Myakka State Park went above flood stage on August 5th, crested at 10.02 feet on August 13th, and fell below flood stage on September 19th. Flood stage is 7 feet.									
FLZ048									
Hernando									
	01	0000EST			0	0			Flood
	13	1200EST							
The Withlacooche River at Trilby went above flood stage on August 11th, crested at 13.95 feet on August 24th, and fell below flood stage on September 13th. Flood stage is 12 feet.									
Lee County									
2 S (Fmy)Ft Myers Pag	05	1700EST			0	1			Lightning
A man in rural Lee County was struck by lightning, taken to the hospital, then released.									

Storm Data and Unusual Weather Phenomena

September 2003

										September 2003
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property Crops	Character of Storm	
FLORIDA, West Central										
Charlotte County										
Port Charlotte to Punta Gorda	05	1730EST 1900EST			0	0	90K		Flash Flood	
A feeder band ahead of Tropical Storm Henri produced seven inches of rain in three hours in the Tee-N-Green area of Punta Gorda. Numerous streets were flooded and water lapped into homes due to the wakes produced by passing vehicles. The hardest hit area was Marion Street and the Whidden Industrial area in Punta Gorda, and along Edgewater and Kings Highway in Port Charlotte										
Sarasota County										
Englewood to North Port	05	1730EST 1900EST			0	0	30K		Flash Flood	
A total of 5 to 9 inches of rain fell during the event with the hardest hit area along Price and Salford Boulevards in North Port. The flooding was severe enough that the American Red Cross opened a shelter for displaced residents.										
Hernando County										
South Central Portion	06	0555EST 0700EST			0	0			Flash Flood	
A stationary thunderstorm dropped 5 to 7 inches of rain in one hour near the Brooksville Airport and caused rapid flooding of roads. Emergency Management reported the water retreated as fast as it came, with the flood lasting only for 50-80 minutes. No significant damage occurred due to the lack of homes in the area. The thunderstorm developed on the north side of a tropical low as it moved onshore near Mediera Beach in Pinellas County. This tropical low was formerly known as Tropical Storm Henri that produced winds of 41 knots with gusts to 52 knots at Buoy 42036 100 NM west northwest of Bayport, FL on September 5th at 1200 EST										
Lee County										
Cape Coral	13	1730EST 1830EST			0	0			Flash Flood	
A nearly stationary thunderstorm formed along a sea breeze boundary across Cape Coral and dropped four to six inches of rain in three hours. The excessive rain caused widespread flooding along Hancock Bridge Parkway from Sarabarbra Blvd to N.E. 24th Ave.										
Pasco County										
1 W Hudson	25	1257EST			0	0			Hail (0.88)	

FLORIDA, West Panhandle

NONE REPORTED.

GEORGIA, East Central

NONE REPORTED.

GEORGIA, Lower

NONE REPORTED.

GEORGIA, North and Central

Gilmer County

Ellijay

03 2235EST
04 0015EST

0 0

Flash Flood

The Gilmer county 911 center reported that heavy thunderstorm rains resulted in flooding of one road in the city with water flowing across the road. A business parking lot was also flooded out.

Monroe County

Juliette

04 1500EST

0 0

1K

Thunderstorm Wind (G50)

A television station in Macon received a report from the public that five to six trees had been blown down.

Warren County

Warrenton

04 1540EST

0 0

1K

Thunderstorm Wind (G50)

The Warren county Emergency Management Director reported that a shed was blown over at a gasoline service station.

Warren County

Norwood

04 1545EST

0 0

Hail (0.75)

The Norwood Post Office reported dime-sized hail.

Gilmer County

2 WSW Roosevelt to
Ellijay

22 1354EST
1415EST

0 0

Heavy Rain

The Gilmer county Emergency Management Director reported that excessive rainfall had resulted in some minor street flooding along U.S. Highway 76/Georgia Highway 282.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
Killed	Injured									

GEORGIA, North and Central

Gilmer County

2 WSW Roosevelt to
1 ESE Roosevelt

22 1354EST 0 0 5K Thunderstorm Wind (G52)

The Gilmer county Emergency Management Director reported that strong straight line winds or a microburst/downburst had resulted in widespread damage to trees along U.S. Highway 76/Georgia Highway 282 west of Ellijay between Elders and Roosevelt. The damage path was up to four miles long and one mile wide. Numerous trees were snapped off approximately 10 to 12 feet above the ground in this area. Most of the damage was between Cross Roads Church Road and Pleasant Grove Church Road. The worst of the damage was near Dover Chappel Road. No damage to structures was reported.

Hall County

Gainesville

22 1511EST
1545EST 0 0 2K Thunderstorm Wind (G50)

The Hall county 911 center reported that at least three, possibly four trees were down in the city. One of the trees was down on a power line.

Cobb County

Marietta

22 1534EST 0 0 Heavy Rain

The public reported that heavy rain had resulted in minor flooding of some streets and particularly underpasses.

Bartow County

1 E Kingston to
6 N Taylorsville

27 1558EST
1600EST 0 0 0.50K Thunderstorm Wind (G50)

The Bartow county 911 center reported that a couple of trees had been blown down, one on Georgia Highway 293 just east of Kingston and the other on Macedonia Road between Kingston and Taylorsville.

White County

Helen

27 1645EST 0 0 Hail (0.88)

The public reported nickel-sized hail.

Cherokee County

Free Home

27 1840EST 0 0 Hail (0.75)

The public reported penny-sized hail.

Coweta County

3 E Thomas Xrds to
3 S Sharpsburg

27 1840EST 0 0 1K Thunderstorm Wind (G50)

The Coweta county 911 center reported that a couple of trees and a power line were down at Fisher Road and Wynn's Pond Road near the Fayette county border. An off-duty National Weather Service employee reported that a couple of large tree limbs were down on Lower Fayetteville Road south of Sharpsburg.

Madison County

3 W Ila to
1 S Ila

27 1845EST 0 0 25K Thunderstorm Wind (G50)

The National Weather Service cooperative observer for Madison county reported that straight line thunderstorm wind gusts caused extensive damage to trees in the area. Hundreds of trees were either uprooted or broken off, with extensive debris in the streets in and around Ila. Several small structures in the area also sustained wind damage, mainly in the form of damage to roofs. Pea-sized hail was also reported in the area.

GEORGIA, Northeast

Habersham County

East Portion

22 1530EST
1800EST 0 0 20K Flash Flood

A strong storm system produced widespread heavy rainfall across the region, which resulted in some flash flooding across Habersham County. Ankle-deep water entered several businesses in the Baldwin and Cornelia areas. Some creeks overflowed their banks and flooded adjacent roads, including a portion of highway 105 that was washed away. Flooding developed as far north as Clarksville.

Rabun County

4 S Clayton to
Clayton

22 1545EST
1730EST 0 0 Flash Flood

Heavy rainfall caused Stecoah Creek to rise rapidly to flood south of Clayton. Another small creek flooded in Clayton, and a small pond overflowed.

Habersham County

3 NE Cornelia

22 1555EST 0 0 Thunderstorm Wind (G50)

A couple of trees were blown down.

GEORGIA, Southeast

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
GEORGIA, Southwest									
GAZ142	Early								
	05	2100EST			0	0			Flood
		2200EST							
Two to four inches of rain caused flooding on Highways 27 and 39. Reported by the Early County EMA.									
Berrien County Nashville	05	2215EST			0	0			Flash Flood
	06	0000EST							
	Three to five inches of rain flooded several roads including Highways 129 and 168 in Nashville. Reported by the Berrien County EMA.								
GULF OF MEXICO									
Gulf Side Of The Lower Keys Out 20Nm									
Key West	01	2110EST			0	0			Marine Tstm Wind
Wind gust 34 knots (39 mph) recorded at Key West International Airport.									
W End Of The 7 Mile Bridge To Key W Out 20Nm									
Key West	01	2110EST			0	0			Marine Tstm Wind
Wind gust 34 knots (39 mph) recorded at Key West International Airport.									
Key W To Dry Tortugas Waters 7 SW Key West									
	01	2153EST			0	0			Marine Tstm Wind
Wind gust 37 knots (43 mph) recorded at Sand Key CMAN station.									
Ocean Reef To Craig Key Fl Out 20Nm 7 S Key Largo									
	01	2203EST			0	0			Marine Tstm Wind
Wind gust 40 knots (46 mph) recorded at Molasses Reef CMAN station.									
Englewood To Tarpon Springs Fl Out 20Nm 8 NW St Petersburg Bc									
	03	1652EST			0	0			Waterspout
Emergency Management reported a waterspout offshore of Madeira Beach.									
Mobile Bay Pinto Island	04	1350CST			0	0			Marine Tstm Wind
Pensacola Fl To Pascagoula Ms Out 20Nm									
Dauphin Island	04	1350CST			0	0			Marine Tstm Wind
High Is To Freeport Tx Out 20Nm High Is									
	04	1610CST			0	0			Marine Tstm Wind
Measured at High Island School.									
Mobile Bay Pinto Island	04	1620CST			0	0			Marine Tstm Wind
Atchafalaya R To Cameron La Out 20Nm									
12 S Cameron	04	1906CST			0	0			Marine Tstm Wind
Offshore oil rig recorded 40 kt wind gust.									
Ocean Reef To Craig Key Fl Out 20Nm 7 S Key Largo									
	06	0250EST			0	0			Marine Tstm Wind
Wind gust 44 knots (51 mph) recorded at Molasses Reef CMAN station.									
W End Of The 7 Mile Bridge To Key W Out 20Nm									
8 S Key West	08	1335EST			0	0			Waterspout
1349EST Waterspout observed 8 miles south of Key West International Airport.									

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
Killed	Injured	Property	Crops						
GULF OF MEXICO									
Pascagoula Ms To Sw Pass Of Ms R Out 20Nm									
8 S Biloxi	09	1410CST			0	0			Waterspout
Florida Bay									
13 ENE Duck Key	09	1627EST			0	0			Waterspout
Large mature waterspout observed by spotters 2 miles west of Lignumvitae Key.									
Florida Bay									
13 ENE Duck Key	09	1630EST 1700EST			0	0			Waterspout
Four rope-like waterspouts observed by spotters 5 miles west of Islamorada.									
W End Of The 7 Mile Bridge To Key W Out 20Nm									
4 WSW Big Pine Key	10	0728EST			0	0			Waterspout
Waterspout observed 1 mile south of Ramrod Key.									
W End Of The 7 Mile Bridge To Key W Out 20Nm									
4 SE Key West	10	1324EST 1334EST			0	0			Waterspout
Waterspout observed 4 miles southeast of Key West International Airport.									
Gulf Side Of The Lower Keys Out 20Nm									
11 WNW Big Pine Key	10	1537EST			0	0			Waterspout
Waterspout observed by spotters and off-duty NWS employees 3 miles north of Cudjoe Key.									
Gulf Side Of The Lower Keys Out 20Nm									
3 N Key West	10	1616EST 1625EST			0	0			Waterspout
Waterspout observed just north of Roosevelt Boulevard with spray ring visible.									
Gulf Side Of The Lower Keys Out 20Nm									
14 WNW Big Pine Key	10	1637EST 1658EST			0	0			Waterspout
Waterspout observed from spotter in an aircraft. Dark spot stage first observed at 1637 LT with subsequent collar cloud and funnel. Frigate birds observed circling in the associated updraft.									
Cameron La To High Is Tx Out 20Nm									
12 S Mouth Of Sabine I	11	0905CST			0	0			Marine Tstm Wind
Oil platform recorded 35 kt wind gust.									
Cameron La To High Is Tx 20 To 60Nm									
30 SSE Mouth Of Sabir	11	0921CST			0	0			Marine Tstm Wind
Offshore oil rig recorded 35 kt wind gust.									
Pt O'Connor To Aransas Pass									
Port O'Connor	12	0200CST			0	0			Marine Tstm Wind
Reported by TCOON site.									
Pt O'Connor To Aransas Pass									
13 N Port Aransas	12	0309CST 0409CST			0	0			Marine Tstm Wind
Recorded by RKP (Rockport) ASOS.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

GULF OF MEXICO

Corpus Christi To Baffin Bay

7 SW Port Aransas

12 0312CST

0

0

3M

Marine Tstm Wind

83 mph wind gust occurred at Ingleside and relayed by local news station. TCOON site just south of Ingleside reported peak gust of 48 knots. Winds caused a 400-foot barge to break loose and drift across the ship channel. 31 workers on the barge were blown off into the bay, however no injuries or fatalities were reported. A 200-ton crane fell off the barge forcing a shutdown of the Intracoastal Waterway.

Corpus Christi To Baffin Bay

Corpus Christi

12 0332CST

0

0

Marine Tstm Wind

Reported by NGP (Navy Corpus Christi).

Matagorda Ship Chnl To Pt Aransas Out 20Nm

Port Aransas

12 0336CST

0

0

Marine Tstm Wind

Pt Aransas To Baffin Bay Tx Out 20Nm

Port Aransas

12 0336CST

0

0

Marine Tstm Wind

Port Aransas bouy recorded peak gust of 37 knots. However gusts up to 60 knots were estimated over the island in Port Aransas where damage occurred. (See Nueces county below for description of damage which occurred on land).

Pt Aransas To Baffin Bay Tx Out 20Nm

Bob Hall Pier

12 0411CST

0

0

Marine Tstm Wind

Reported by TCOON site.

Corpus Christi To Baffin Bay

South Bird Island

12 0412CST

0

0

Marine Tstm Wind

Reported by TCOON site.

Pt O'Connor To Aransas Pass

Port Aransas

12 0412CST

0

0

Marine Tstm Wind

Matagorda Ship Chnl To Pt Aransas Out 20Nm

Pltfm 17Se Prt Arnsas

12 0418CST

0

0

Marine Tstm Wind

Matagorda Ship Chnl To Pt Aransas Tx 20 To 60Nm

Pltfm 17Se Prt Arnsas

12 0430CST

0

0

Marine Tstm Wind

Pt Aransas To Baffin Bay Tx 20 To 60Nm

30 E Corpus Christi

12 0430CST

0

0

Marine Tstm Wind

Pt Aransas To Baffin Bay Tx Out 20Nm

8 SE Port Aransas

12 0448CST

0

0

Marine Tstm Wind

Reported at RTNS Platform.

Matagorda Ship Chnl To Pt Aransas Tx 20 To 60Nm

Pltfm 17Se Prt Arnsas

12 0600CST

0

0

Marine Tstm Wind

Storm Data and Unusual Weather Phenomena

September 2003

September 2003										
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
GULF OF MEXICO										
Pt Aransas To Baffin Bay Tx 20 To 60Nm 45 E Baffin Bay	12	0600CST			0	0				Marine Tstm Wind
High Is To Freeport Tx Out 20Nm Freeport	12	0200CST			0	0				Marine Tstm Wind
Measured at TCOONS Freeport Flow Info.										
Matagorda Bay Port O'Connor	12	0218CST			0	0				Marine Tstm Wind
Measured at TCOONS Port O'Connor.										
Freeport To Matagorda Ship Chnl Out 20Nm 25 SW Matagorda	12	0224CST			0	0				Marine Tstm Wind
Measured at TCOONS Port O'Connor.										
Freeport To Matagorda Ship Chnl 20 To 60Nm Buoy 42019	12	0900CST			0	0				Marine Tstm Wind
Measured at Buoy 42019.										
Ocean Reef To Craig Key Fl Out 20Nm 20 SW Key Largo	12	0715EST 0735EST			0	0				Waterspout
Mature and very wide funnel with large turbulent spray ring observed 8 miles southeast of Lower Matecumbe Key.										
Gulf Side Of The Lower Keys Out 20Nm 10 W Big Pine Key	12	0724EST			0	0				Waterspout
Waterspout observed 2 miles north of Upper Sugarloaf Key.										
Cameron La To High Is Tx 20 To 60Nm 28 SSW Mouth Of Sabi	12	0822CST			0	0				Marine Tstm Wind
Offshore oil rig recorded 43 kt wind gust.										
Gulf Side Of The Lower Keys Out 20Nm 5 NE Big Pine Key to Big Pine Key	12	1235EST			0	0				Waterspout
Pilot observed waterspout 30 nautical miles east northeast of Key West International Airport.										
Lake Ponchartrain And Lake Maurepas Mid Lke Pontchartrain	13	1315CST			0	0				Marine Tstm Wind
Lake Ponchartrain And Lake Maurepas Lkfrnt Arpt New	13	1317CST			0	0				Marine Tstm Wind
Thunderstorm winds capsized a number of sailboats on Lake Pontchartrain.										
Pt Aransas To Baffin Bay Tx Out 20Nm Port Aransas	18	1600CST			0	0				Marine Tstm Wind
Corpus Christi To Baffin Bay South Bird Island	18	1636CST			0	0				Marine Tstm Wind
Reported by TCOON site.										

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

GULF OF MEXICO

Pt Aransas To Baffin

Bay Tx Out 20Nm

Bob Hall Pier	18	1700CST			0	0			Marine Tstm Wind
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Reported by TCOON site.

Corpus Christi To

Baffin Bay

Baffin Bay	18	1724CST			0	0			Marine Tstm Wind
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Reported by TCOON site.

Freeport To

Matagorda Ship Chnl

20 To 60Nm

Buoy 42019	21	1200CST			0	0			Marine Tstm Wind
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Measured at Buoy 42019.

Cameron La To High

Is Tx Out 20Nm

12 S Mouth Of Sabine I	21	1206CST			0	0			Marine Tstm Wind
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Craig Key To The W

End Of The 7 Mile

Bridge Out 20Nm

1 ESE Marathon	22	1147EST 1152EST			0	0			Waterspout
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Large waterspout observed by spotters and county officials moved northwest into the mangroves adjacent to Marathon High School and dissipated. No damage reported. Marathon High School enacted its tornado safety drill procedure as the waterspout approached.

Key W To Dry

Tortugas Waters

7 SW Key West	25	1154EST			0	0			Marine Tstm Wind
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Wind gust 34 knots (39 mph) recorded at Sand Key CMAN station.

Florida Bay

7 NE Duck Key

	26	0712EST			0	0			Marine Tstm Wind
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Wind gust 37 knots (43 mph) recorded at Long Key CMAN station.

Pensacola Fl To

Pascagoula Ms Out

20Nm

Dauphin Island	27	1305CST			0	0			Marine Tstm Wind
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Englewood To Tarpon

Springs Fl Out 20Nm

13 SSE St Petersburg B	28	1542EST			0	0			Waterspout
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The short lived waterspout was reported by the Manatee County Emergency Management just offshore of Bean Point.

Craig Key To The W

End Of The 7 Mile

Bridge Out 20Nm

7 S Marathon	28	2033EST			0	0			Marine Tstm Wind
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Wind gust 48 knots (55 mph) recorded at Sombrero Key Light CMAN station.

Craig Key To The W

End Of The 7 Mile

Bridge Out 20Nm

7 S Marathon	28	2358EST			0	0			Marine Tstm Wind
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Wind gust 45 knots (52 mph) recorded at Sombrero Key Light CMAN station at 2358 EST on the 28th, followed by a gust to 42 knots (48 mph) at 0008 EST on the 29th. 10-minute sustained wind measured at 37 knots.

29 0008EST

HAWAII

HIZ004-008

North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - South Hawaii Including Kau

01 0000HST	0	0							Heavy Surf/High Surf
02 0600HST									

A swell from Tropical Storm Jimena produced surf of 10 to 15 feet along the east- and southeast-facing shores of the Big Island of Hawaii. There were no reports of serious injuries or property damage.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
Killed	Injured									

HAWAII

HIZ001>003-005>006 Kauai - Oahu - Maui - Molokai - Lanai

01 0300HST 0 0 Heavy Surf/High Surf
02 0800HST

A swell from Tropical Storm Jimena generated surf of 4 to 8 feet along the east- and southeast-facing shores of Kauai, Oahu, Molokai, Lanai, and Maui. No serious property damage or injuries were reported. However, more than 350 swimmers had to be rescued from waters off the south shore of Oahu during the Waikiki Roughwater Swim during the morning hours of the 1st of September. Strong currents forced many of the event's participants to seek assistance in getting out of the water. Those who had to be helped were rescued by city lifeguards, the fire department, the Coast Guard, and Good Samaritans. The Honolulu Police Department and Emergency Medical Services also contributed to the overall operation.

Hawaii County

17 NW Laupahoehoe to 01 0315HST 0 0 Heavy Rain
10 SSW Naalehu 1600HST

Rain bands associated with Tropical Storm Jimena, which was passing more than 100 miles south, moved over coastal and upslope sections of the Hamakua, Hilo, Puna, and Kau districts on the Big Island of Hawaii, from near Hopokaa all the way southward to near Ka Lae (South Point). The heavy rain and showers caused stream and drainage ditch flooding, and ponding of roadways in populated areas over the eastern half of the isle. The rain and occasional easterly wind gusts of 35 to 40 mph caused isolated power outages as well. However, no serious injuries or property damage were reported.

HIZ001>002

Kauai - Oahu
09 0700HST 0 0 Heavy Surf/High Surf
10 1400HST

A strong low in the southern hemisphere near New Zealand produced surf of 4 to 8 feet along the south shores of Kauai and Oahu. There were no reports of serious injuries or property damage.

Honolulu County

Laie to 10 2045HST 0 0 Heavy Rain
Honolulu 11 0845HST

Heavy showers caused ponding of roadways, and drainage ditch and stream flooding in eastern and southern parts of Oahu. However, there were no reports of serious property damage or injuries.

Honolulu County

Wahiawa 11 1210HST 0 0 Funnel Cloud
1230HST

A police officer spotted a funnel cloud near the town of Wahiawa on Oahu. The funnel cloud dissipated within a short time.

Maui County

3 SSW Kahului 16 0445HST 0 0 Wildfire
19 1800HST

A controlled burn by the Hawaiian Commercial & Sugar Company got out of hand near Waikapu on Maui when the wind carried some of the flames into nearby mountainous terrain. The fire ended up blackening about 1000 acres of parched grassland, to as high as 2000 feet in elevation in the West Maui Mountains. The blaze forced the evacuation of the Sandalwood and Grand Waikapu golf courses for a few hours during the afternoon of the 16th and all day on the 17th. State and federal firefighters, with the help of four water-carrying helicopters (including a large Chinook from the Hawaii Army National Guard on Oahu), battled the fire over several days. However, no serious injuries or property damage were reported.

Honolulu County

1 SE Waialua 23 2000HST 0 0 Wildfire
24 1900HST

A fire scorched about 1100 acres of old sugar cane and pineapple fields near Waialua on Oahu. Several homes near the blaze had to be evacuated as a precaution, as flames came within 20 feet of three residences in Poamoho Estates and within 100 yards of homes along Hukilau Loop. The fire downed some power lines, which caused sporadic outages in a few nearby neighborhoods and at Schofield Barracks. It also forced occasional closures of roads and highways around Waialua and Thomson Corner, slowing and snarling traffic at times. County and military firefighters fought the blaze, with the help of one county and two Army Blackhawk helicopters. The fire had started during the evening of the 23rd, near the University of Hawaii's Poamoho Experiment Station off Kaukonahua Road, although its cause was not known. There were no serious injuries or property damage.

Hawaii County

6 S Pahoa 30 1230HST 0 0 Wildfire
1912HST

A brush fire scorched about 200 acres in the Kalapana area of the Big Island of Hawaii. The fire threatened several homes in the

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

HAWAII

A brush fire scorched about 200 acres in the Kalapana area of the Big Island of Hawaii. The fire threatened several homes in the Black Sands Beach subdivision, but firefighters were able to prevent the flames from doing damage to any structures. There were no evacuations or serious injuries. The cause of the blaze was unknown, but fire officials were looking into the possibility of arson.

HAWAII WATERS

Channels Between The Islands

1 SW Kailua Kona	05	0725HST 0745HST			0	0			Waterspout
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A weather spotter on the Big Island of Hawaii sighted a waterspout off the Kona coast. No serious property damage or injuries were reported.

IDAHO, Extreme Southeast

NONE REPORTED.

IDAHO, North

NONE REPORTED.

IDAHO, Northwest

NONE REPORTED.

IDAHO, Southeast

Clark County

9 N Kilgore	01	0100MST			0	0			Wildfire
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4400 acre fire burned timber, downed fuels and grass. No structural damage reported. Cost to suppress estimated at 600,000 dollars.

Lincoln County

17 ESE Dietrich	13	0500MST			0	0			Wildfire
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2600 SID fire east of Dietrich. Burned grass and sage. No structural damage.

IDZ020

Upper Snake River Plain

	16	1440MST 1700MST			0	0			High Wind (G42)
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Sustained winds of 48 mph occurred over the INEEL site west of Idaho Falls.

Blaine County

1 E Gannett	21	0800MST			0	0			Wildfire
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1000 acre Gannett fire burned sage and grass. No structural damage.

Clark County

12 NW Dubois	28	0900MST			0	0			Wildfire
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400 acre East fork fire burned grass, sage and cottonwoods. No structural damage reported.

IDAHO, Southwest

NONE REPORTED.

ILLINOIS, Central

Coles County

Charleston	26	1317CST			0	0			Hail (0.75)
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Woodford County

Minonk	26	1359CST			0	0			Hail (1.25)
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Schuyler County

5 S Huntsville	26	1452CST			0	0			Hail (0.88)
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Cass County

8 S Beardstown	26	1528CST			0	0			Thunderstorm Wind (G50)
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Several trees were blown down onto US 67 south of Beardstown.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ILLINOIS, Central

Logan County

2 SE Broadwell to
2.6 SE Broadwell

26 1615CST 0.8 50 0 0 15K 30K Tornado (F1)

A tornado briefly touched down southeast of Broadwell. It destroyed an old outbuilding, blew down two trees, and blew out 5 windows on a house. Two people in the house at the time, saw the tornado approaching and took shelter in the basement. No injuries were reported. Also, the wooden cellar door on the house was torn off and nearby crops were destroyed

Logan County

Mt Pulaski to
4 SE Mt Pulaski

26 1625CST 0 0 Thunderstorm Wind (G60)

Thunderstorm winds blew down numerous trees in Mt. Pulaski, Chestnut and near Latham. One of the trees was blown down onto an unoccupied truck in Chestnut, damaging it. In Mt. Pulaski, several trees were blown over blocking several streets and a garage was damaged from a fallen tree. No injuries were reported.

Coles County

4 NNE Mattoon to
4 NE Mattoon

26 1750CST 1.5 250 0 1 10M Tornado (F1)

A tornado touched down 4 miles north northeast of Mattoon near a printing plant. It then traveled east damaging several buildings at the plant. Almost 500,000 square feet of the roof was damaged or destroyed. Contents in the buildings including electronic equipment and over 5 million pounds of paper were damaged. With over 400 employees in the plant at the time of the tornado, only one person suffered minor injuries but didn't need immediate medical attention. After hitting the plant, the tornado damaged some outbuildings at a nearby farm before lifting and dissipating. Damage to the plant was estimated around \$10 million.

Clay County

1 W Louisville to
Flora

26 1915CST 0 0 Thunderstorm Wind (G50)

Several power lines were blown down.

Jasper County

Falmouth

26 1945CST 0 0 Thunderstorm Wind (G55)

Numerous large tree limbs were blown down onto Illinois Route 130. No injuries were reported

Richland County

Olney

26 1947CST 0 0 Thunderstorm Wind (G60)

Numerous tree limbs and several trees were blown down around town. No injuries were reported.

Crawford County

Countywide

26 2009CST 0 0 Thunderstorm Wind (G55)

Numerous trees and power lines were blown down countywide. No injuries were reported.

Lawrence County

Bridgeport to
Lawrenceville

26 2012CST 0 0 Thunderstorm Wind (G51)

Numerous trees and power lines were blown down. No injuries were reported.

ILLINOIS, Northeast

Grundy County

Coal City

26 1330CST 0 0 Hail (0.88)

1335CST

Livingston County

Pontiac

26 1426CST 0 0 Hail (1.00)

1434CST

Quarter size hail covered the ground.

ILLINOIS, Northwest

Whiteside County

Fulton

12 1738CST 0.2 35 0 0 5K 10K Tornado (F0)

1739CST

Rated high end F0
Tornado developed out of a non-supercell thunderstorm or heavy rain shower and touched down on the south side of Fulton, Illinois, south-southeast of the intersection of 24th Avenue and 4th Street. The tornado moved Northeast through the Sikkema Trailer Park and crossed 5th and 6th streets before dissipating in a corn field. Widespread tree limb damage was noted during the survey with corn stalks tossed into power lines. Adjacent corn field was heavily damaged. Numerous public reports of a funnel were received by the Whiteside County Sheriff Office with no lightning observed. Path length 0.2 miles with a width of 35 yards.

Henry County

Galva

26 1217CST 0 0 Hail (0.75)

1219CST

Lasted 2 minutes

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ILLINOIS, Northwest

Hancock County

Nauvoo 26 1319CST 1322CST 0 0 70K Hail (1.75)

Minor street flooding from heavy rain.

Hancock County

5 N Ferris 26 1328CST 1333CST 0 0 Funnel Cloud

Mcdonough County

2 NW Macomb 26 1400CST 1402CST 0 0 Hail (0.88)

An upper level disturbance allowed thunderstorms to develop across Northeast Missouri, Southeast Iowa, and West Central Illinois during the afternoon. The storms produced spotty hail with a few funnel clouds. A meteorology professor at Western Illinois University in Macomb, Illinois observed a rotating wall cloud move across the city from 1407 CST to 1412 CST. Fortunately, no tornadogenesis occurred.

ILLINOIS, South

ILZ078-083

Wabash - White

10 2100CST 0 0 Flood
13 2000CST

Minor flooding of the Wabash River occurred for a few days. At Mount Carmel, where flood stage is 19 feet, the river crested at 19.9 feet on September 12. The crest at New Harmony, Indiana was only a couple of inches above the 15-foot flood stage. The impacts around Mount Carmel were mainly to low-lying farmland and oil fields near the river. Oil field production ceased with the exception of pumping units on substructures. Access to those was by boat only. The City of Mount Carmel installed flood gate C. At New Harmony, there was little impact, but some low cropland was flooded on the Illinois side of the river

Perry County

Pinckneyville 26 2030CST 2120CST 0 0 Heavy Rain

Flooding of a few streets was reported, including Main Street.

ILLINOIS, Southwest

St. Clair County

Cahokia 26 0515CST 0 0 Lightning

An early morning fire at a propane facility in Cahokia was caused by a lightning strike. The lightning hit a manifold where two 10 inch high pressure lines converge. Flames were reported shooting 100 feet into the air. Shut off valves on the lines were closed, but since one valve was 3 miles away, the fire continued until early afternoon as the residual fuel in the line burned off.

Adams County

Lima 26 1425CST 0 0 Hail (1.75)

Adams County

Loraine 26 1425CST 0 0 Hail (1.75)

Storm spotters reported golfball size hail in Loraine and Lima.

Adams County

3 N Golden 26 1445CST 0 0 Hail (1.50)

Adams County

Camp Pt 26 1450CST 0 0 Hail (2.00)

Storm spotters reported hail up to 2 inches in diameter in Camp Point and 1 1/2 inch hail near Golden.

Adams County

Quincy 26 1448CST 0 0 Thunderstorm Wind (G55)

A local television station reported several trees and power lines down in the southeast part of Quincy.

Brown County

Mt Sterling 26 1510CST 0 0 Thunderstorm Wind (G55)

Some trees and large branches were downed by thunderstorm winds in parts of Mt. Sterling. The areas hardest hit included North Maple, Northwest Cross, Forrest, and North Capitol streets.

Madison County

Glen Carbon 26 1748CST 0 0 Thunderstorm Wind (G60)

Madison County

Granite City 26 1750CST 0 0 Thunderstorm Wind (G60)

The County Sheriff office reported trees and power lines down in Glen Carbon and Granite City. One home in Glen Carbon was damaged by a fallen tree.

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
ILLINOIS, Southwest									
Madison County 3 S Marine	26	1810CST			0	0			Thunderstorm Wind (G60) Thunderstorm wind gusts downed trees and damaged some buildings in a subdivision in rural Madison County between Marine and St. Jacob. At one home, 9 Bartlett Pear trees were downed by the storm. Another home lost roof shingles and had an 8 by 10 foot shed blown into a neighbors yard. A television antenna was bent and a fence was also damaged by a downed tree.
St. Clair County Belleville	26	1815CST			0	0			Thunderstorm Wind (G55) Amateur radio spotters reported trees and power lines down in the western part of Belleville.
Madison County Highland	26	1815CST			0	0			Thunderstorm Wind (G60) Several power poles were broken by thunderstorm winds along Route 143 in Highland. The sign at a Dairy Queen on Route 143 was destroyed. Some trees and power lines were also downed in other parts of town as well.
Marion County Salem	26	1850CST			0	0			Thunderstorm Wind (G55)
Marion County 3 S Sandoval	26	1850CST			0	0			Thunderstorm Wind (G55) Salem EMA officials reported trees down blocking Highway 51 south of Sandoval. Scattered trees were also down in Salem which blocked some streets.
Marion County 2 W Kimmundy	26	1853CST			0	0			Hail (1.00) The Salem EMA office reported 1 inch hail just west of Kimmundy.
Randolph County Sparta	26	1930CST			0	0			Hail (0.75)
Randolph County Tilden	26	1930CST			0	0			Hail (0.75) Storm spotters reported 3/4 inch hail in Sparta and Tilden.
INDIANA, Central									
INZ045		Putnam							
	01	0542EST			0	0			Flood 6 to 8 inches of rain fell across parts of central Indiana during the Labor Day weekend causing flooding along Big Walnut Creek. Reelsville crested at 16.63 feet (flood stage is 12 feet) on September 3.
	03	0400EST							
Hendricks County Countywide	01	0555EST 0900EST			0	0	2.5M		Flash Flood
Madison County Countywide	01	0620EST 0900EST			0	0	2.5M		Flash Flood
Putnam County Countywide	01	0625EST 0900EST			0	0	1M		Flash Flood
Hamilton County Countywide	01	0630EST 0900EST			0	0	5M		Flash Flood
Marion County Countywide	01	0635EST 0900EST			0	0	5M		Flash Flood
INZ029>030-035>037-039>041-043>049-051>057-060>061-063>065-067>072		Tippecanoe - Clinton - Fountain - Montgomery - Boone - Hamilton - Madison - Delaware - Vermillion - Parke - Putnam - Hendricks - Marion - Hancock - Henry - Vigo - Clay - Owen - Morgan - Johnson - Shelby - Rush - Sullivan - Greene - Brown - Bartholomew - Decatur - Knox - Daviess - Martin - Lawrence - Jackson - Jennings							
	01	0900EST			0	0	2.5M		Flood
	03	0300EST							
Randolph County Countywide	01	1030EST 1500EST			0	0	1M		Flash Flood
Henry County Countywide	01	1130EST 1500EST			0	0			Flash Flood

Storm Data and Unusual Weather Phenomena

September 2003

		Time	Path	Path	Number of		Estimated		September 2003
Location	Date	Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
INDIANA, Central									
Hendricks County									
Countywide	01	1230EST 1500EST			0	0			Flash Flood
Marion County									
Countywide	01	1245EST 1500EST			0	0			Flash Flood
Hamilton County									
Countywide	01	1300EST 1500EST			0	0			Flash Flood
Madison County									
Countywide	01	1300EST 1500EST			0	0			Flash Flood
Hancock County									
Countywide	01	1330EST 1500EST			0	0			Flash Flood
Rush County									
Countywide	01	1430EST 1700EST			0	0			Flash Flood
Shelby County									
Countywide	01	1430EST 1700EST			0	0			Flash Flood

Record rainfall event occurred across central Indiana starting in the evening of August 31 and continuing through the morning of September 2. The heaviest rain occurred along an axis from Vigo to Clay to Putnam to Hendricks to Marion to Hamilton to Madison, Delaware and Randolph counties. Many spots near the axis received 8 to 10 inches over the 30 hour period. This resulted in widespread flash flooding and flooding along small creeks. There were numerous evacuations from homes and rescues from vehicles. Many schools were closed. Many neighborhoods that never saw flooding before were flooded. There were also hundreds of flooded basements. The National Guard was activated to help with road closings and rescues at the request of the city of Indianapolis. The flooding continued through the early morning of September 3

INZ036>037-044>045 Montgomery - Boone - Parke - Putnam

01	0739EST	0	0	Flood
02	1642EST			

6 to 8 inches of rain fell across parts of central Indiana during the Labor Day weekend causing flooding along Big Raccoon Creek. Fincastle crested at 16.35 feet (flood stage is 11 feet) on September 1, while Coxville crested at 14.67 feet (flood stage is 14 feet) on September 2.

INZ037-047 Boone - Marion

01	0750EST	0	0	2M	Flood
02	1400EST				

8 to 10 inches of rain fell over the Labor Day weekend causing major flooding along Eagle Creek and Little Eagle Creek near Speedway. Eagle Creek crested at Speedway at 16.57 feet. Flood stage is 9 feet. Eagle Creek at Zionsville crested at 12.34 feet. Flood stage is 9 feet. The Speedway area had it's worst flooding since June 1957.

INZ021-028>029-035-043>044-051-060 Carroll - Warren - Tippecanoe - Fountain - Vermillion - Parke - Vigo - Sullivan

01	1042EST	0	0	Flood
12	0117EST			

Around 3 to 6 inches of rain fell over the Labor Day weekend. This caused minor flooding along the Wabash River. A few county roads, parks and river cabins were affected as a result of the flooding. There was also quite a bit of agricultural bottomland flooding, although most of the crops were already lost to the July flooding.

Location:	Flood Stage:	Crest:	Date of Crest:
Lafayette	11.0	16.47	09/03/03
Covington	16.0	20.33	09/04/03
Montezuma	14.0	22.30	09/03/03
Terre Haute	14.0	19.37	09/04/03
Hutsonville	16.0	20.90	09/06/03
Riverton	15.0	18.92	09/08/03

INZ039-047 Hamilton - Marion

01	1116EST	1	0	Flood
04	1435EST			

Record flooding occurred along Fall Creek at Millersville. The creek crested at 15.7 feet. The flood stage is 9.0 feet. The flooding was the result of 8 to 10 inches of rain that fell over the Labor Day weekend. An elderly woman lost her life when her car was swept into the creek. F78IW

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

INDIANA, Central

Henry County New Castle

01 1310EST **0 1 200K** **Thunderstorm Wind (G60)**
1311EST

Straight-line winds caused considerable damage to several houses and vehicles. A man also received an eye injury but was in fair condition.

**INZ039>041-047-
053>055-061>062-
067>068**

Hamilton - Madison - Delaware - Marion - Owen - Morgan - Johnson - Greene - Monroe - Knox - Daviess

01 1326EST **0 0 22M** **Flood**
11 0651EST

8 to 10 inches of rain fell across central Indiana during the Labor Day weekend causing major flooding along parts of the White River. In fact, Indianapolis received the most rain ever for a calendar day (7.2 inches) breaking the old record set in 1895 (6.8 inches). According to a local newspaper account, nearly 3,000 residents across central Indiana applied for flood assistance and flood damage was estimated in excess of 20 million dollars. SEMA reports indicated more than 300 homes and nearly 60 businesses were flooded. Nearly 200 people were forced to evacuate their residences. The cities of Muncie and Anderson had near major flooding as the river crested at its highest level since April 1964 and June 1958 respectively. While the city proper of Muncie was protected by levees, considerable flood damage occurred in areas just outside of the city proper. Sandbagging in the city of Anderson saved more than 100 homes from flood damage. The local flood protection would have been overtopped without the sandbagging. There was extensive flooding across Hamilton County, however levels were nearly 2 feet below those of July 2003.

The White River in the southern portion of Marion County came up 15 feet in just 18 hours after the rain ended. The greatest flood since January 1, 1991 on the White River in Indianapolis met the record flood on White Lick Creek near Centerton and produced the largest flood ever seen in Morgan County since March 1913. This flood raced downstream and struck Owen County on the 3rd. Consequently, Owen County had its worst flooding since January 1991. As this flood approached Greene County, the flood transformed to an extensive agricultural flood and its speed slowed. A near major flood along the Eel River in the Bowling Green area met this large flood along the White River at Worthington. The resulting flooding in Greene County exceeded the July 2003 flood by 2.5 feet. This was the biggest flood in Greene County since May 2002.

Location:	Flood Stage:	Crest:	Date of Crest:
Muncie	9.0	14.02	09/02/03
Anderson	10.0	19.52	09/03/03
Noblesville	14.0	19.99	09/04/03
Nora	11.0	15.35	09/04/03
Ravenswood	6.0	9.5	09/04/03
Indianapolis	16.0	19.65	09/01/03
Centerton	12.0	19.87	09/02/03
Spencer	14.0	23.30	09/04/03
Worthington	18.0	26.64	09/05/03
Elliston	18.0	28.10	09/06/03
Newberry	13.0	22.93	09/06/03
Edwardsport	15.0	23.30	09/07/03

INZ054

Morgan

01 1332EST **0 0** **Flood**
02 2106EST

A tie for a record flood, along White Lick Creek at Mooresville, accompanied 3 to 6 inches of rain that fell over the Labor Day weekend. The gage crested at 23.32 feet. Flood stage is 17.0 feet.

Shelby County Shelbyville

01 1430EST **0 0** **Thunderstorm Wind (G50)**

Law enforcement reported trees down.

INZ041

Delaware

01 1512EST **0 0** **Flood**
03 0706EST

6 to 8 inches of rain fell over the Labor Day Weekend causing flooding along the Mississinewa River. Ridgeville crested at 14.68 feet (flood stage is 11 feet) on September 1.

INZ049-056>057

Henry - Shelby - Rush

01 1534EST **0 0** **Flood**
04 0834EST

6 to 8 inches of rain fell across parts of central Indiana during the Labor Day weekend causing flooding along the Big Blue River. Carthage crested at 10 feet (flood stage is 7 feet) on September 2, and Shelbyville crested at 13.78 feet (flood stage is 11 feet) on September 3.

INZ021-029-031

Carroll - Tippecanoe - Howard

01 1603EST **0 0** **Flood**
04 1732EST

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
INDIANA, Central									
3 to 4 inches of rain fell over the Labor Day weekend causing minor flooding along Wildcat Creek. Kokomo crested at 12 feet (flood stage is 10 feet), while Lafayette crested at 13.2 feet (flood stage is 10 feet).									
INZ045-052		Putnam - Clay							
	01	1735EST			0	0			Flood
	04	1235EST							
6 to 8 inches of rain fell across parts of central Indiana during the Labor Day weekend causing flooding along the Eel River. Bowling Green crested at 20.77 feet (flood stage is 17 feet) on September 2.									
INZ045>046-053		Putnam - Hendricks - Owen							
	01	2050EST			0	0			Flood
	04	1343EST							
6 to 8 inches of rain fell over the Labor Day weekend causing flooding along Mill Creek. Cataract crested at 17.62 feet. Flood stage is 15 feet.									
INZ067		Knox							
	06	1729EST			0	0			Flood
	11	0108EST							
3 to 6 inches of rain fell over the upper Wabash River during the Labor Day weekend. This caused minor flooding to occur along the lower Wabash River by September 6. Vincennes crested at 16.5 feet (flood stage is 16 feet) on the 8th.									
INZ067		Knox							
	07	0900EST			0	0			Flood
	13	0600EST							
Flooding occurred along the lower portion of the White River due to the heavy rain that fell further north during the Labor Day weekend. Petersburg crested at 21.54 feet (flood stage is 16 feet) on the 10th, while Hazleton crested at 20.70 feet (flood stage is 16 feet) on the 11th.									
Delaware County									
Eaton to 4 S Muncie	15	1056EST 1111EST			0	0			Hail (1.75)
Dime to golfball size hail was reported by law enforcement and the general public.									
Fountain County									
Countywide	24	0730EST 0930EST			0	0			Flash Flood
Tippecanoe County									
Countywide	24	0730EST 0930EST			0	0			Flash Flood
Warren County									
Countywide	24	0830EST 0930EST			0	0			Flash Flood
There were numerous reports of flooded roadways as 3 to 4 inches of rain fell on already saturated grounds from the Labor Day weekend flooding.									
Tippecanoe County									
Romney	26	1900EST 1910EST			0	0			Hail (1.00)
Montgomery County									
10 SW Crawfordsville	26	1915EST			0	0			Thunderstorm Wind (G50)
Tippecanoe County									
Romney	26	1915EST			0	0			Thunderstorm Wind (G50)
Boone County									
Elizaville	26	2009EST 2010EST			0	0			Hail (0.88)
Hamilton County									
Sheridan	26	2010EST 2011EST			0	0			Hail (0.88)
Hamilton County									
2.2 WSW Arcadia to Arcadia	26	2027EST 2030EST	2.2	100	0	0	300K		Tornado (F1)
An F1 tornado cut a 2 and a quarter mile path across northern Hamilton near Arcadia damaging 1 home and destroying several barns. The tornado also knocked down numerous trees there.									
Hamilton County									
1 S Arcadia	26	2030EST 2031EST			0	0	50K		Thunderstorm Wind (G62)

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<u>INDIANA, Central</u>									
Madison County 2 N Frankton to 3 W Anderson	26	2115EST			0	0	20K		Thunderstorm Wind (G56)
Randolph County Parker City	26	2129EST 2130EST			0	0			Thunderstorm Wind (G50)
Randolph County Ridgeville to New Pittsburg	26	2145EST 2155EST			0	0	10K		Thunderstorm Wind (G56)
A squall line moved across central Indiana during the evening of September 26. The were several reports of trees down and large hail across central Indiana. The worst damage occurred across northern Hamilton county as an F1 tornado cut a 2 and a quarter mile path to near Arcadia damaging 1 home and destroying several barns. The tornado also knocked down numerous trees there. 4 miles south of where the tornado touched down, thunderstorm winds estimated at 72 mph by law enforcement knocked down a scoreboard at Hamilton Heights High School. A high school football game there had to be postponed until the next day as students and fans took cover from the approaching squall line. Finally, a roof received damage and a garage door was destroyed due to straight line winds near Anderson, and a roof was damaged in Randolph county.									
Tippecanoe County Lafayette	26	1930EST 2130EST			0	0			Flash Flood
Street flooding and flooding of underpasses was reported as a squall line moved through dumping heavy rain.									
INZ021-028>029-035-043>044-051-060	Carroll - Warren - Tippecanoe - Fountain - Vermillion - Parke - Vigo - Sullivan								
	27 30	0141EST 2359EST			0	0			Flood
Only 1 to 2 inches of rain fell on September 26, 2003. Even with such a small amount of rainfall, previously saturated ground gave way to minor flooding along the Wabash River. The flooding began on September 27, 2003 and continued into October.									
Location:		Flood Stage:		Crest:	Date of Crest:				
Lafayette		11.0		16.47	09/28/03				
Covington		16.0		20.08	09/29/03				
Montezuma		14.0		18.79	09/30/03				
Terre Haute		14.0		16.47	10/01/03				
Hutsonville		16.0		18.40	10/02/03				
Riverton		15.0		16.90	10/03/03				
<u>INDIANA, Northeast</u>									
Wells County 1 W Keystone	15	1120EST			0	0	0		Hail (0.75)
<u>INDIANA, Northwest</u>									
NONE REPORTED.									
<u>INDIANA, South Central</u>									
Orange County Countywide	01	1838EST 2015EST			0	0			Flash Flood
Several streets in Paoli and French Lick were covered by water. Water was flowing quickly off hillsides and covering parts of Highways 150 and 56.									
Jefferson County Countywide	02	1545EST 2145EST			0	0			Flash Flood
Creeks were flowing out of their banks in the eastern part of the county near Madison. Some roads in Madison were down to one lane open due to flowing water. In the western part of the county near Deputy, numerous road were covered with flowing water and ditches were overflowing. Elsewhere in the county, numerous roads were covered or closed due to high water									
Scott County Lexington	02	1804EST 2130EST			0	0			Flash Flood
State Road 356 north of Lexington, and sections of four other roads in the Lexington area, were impassable due to high water									
INZ079	Jefferson								
	02 03	2020EST 0910EST			0	0			Flood
The Muscatatuck River at Deputy crested at 22.8 feet at 3 AM EST on September 3. Flood stage at Deputy is 20 feet. At this level, county roads are under water in northeastern Jefferson County.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

INDIANA, South Central

Harrison County

Laconia 27 0129EST 0 0 Thunderstorm Wind (G50)
Trees were downed.

INDIANA, Southeast

Wayne County

1 W Richmond 01 1400EST 0 0 5K Thunderstorm Wind (G50)
1404EST

Numerous trees were downed, including one on a home, causing minor damage.

INZ050

Wayne

01 1502EST 0 0 Flood
1700EST

A large area of heavy rain moved across the Whitewater Valley during the afternoon hours. Two to three inches fell during the mid afternoon hours, causing several roads to flood and creeks to rise out of their banks.

INDIANA, Southwest

INZ081>082

Gibson - Pike

07 0900CST 0 0 Flood
13 1800CST

Minor to moderate flooding of the White River occurred for several days. At Petersburg, where flood stage is 16 feet, the river crested at 21.54 feet on September 10. At Hazleton in Gibson County, the river crested at 20.70 feet on September 11. Flood stage there is also 16 feet. Flooding affected higher bottomlands, affecting residents of some river cabins. State Road 257 completely flooded near where it crosses the river east of Petersburg. Flooding affected low agricultural lands and low oil fields, and a few local county roads were closed.

INZ081-085

Gibson - Posey

10 2100CST 0 0 Flood
13 2000CST

Minor flooding of the Wabash River occurred for a few days. At Mount Carmel, Illinois, where flood stage is 19 feet, the river crested at 19.9 feet on September 12. The crest at New Harmony was only a couple of inches above the 15-foot flood stage. The impacts around Mount Carmel were mainly to low-lying farmland and oil fields near the river. Oil field production ceased with the exception of pumping units on substructures. Access to those was by boat only. At New Harmony, there was little impact, but some low cropland was flooded on the Illinois side of the river

IOWA, Central

Union County

2 S Creston to 11 1352CST 3.5 50 0 0 250K 25K Tornado (F0)
1 NNE Creston 1357CST

Tornado cut a continuous path from south of Creston through the town of Creston

A cold front moved into Iowa from the west. Considerable moisture was drawn north on southerly winds ahead of the front with dew points rising into the mid 60s to low 70s across the state. A band of thunderstorms formed ahead of the cold front on what was the warm conveyor belt. One of the storms became severe south of Creston and spawned a small tornado. The tornado touched down about a mile south of town and moved north-northeast through the town of Creston. Several buildings were damaged. One of the buildings lost the entire end of the structure. A few farmsteads were affected as well. As the storm moved through Creston, several houses had roof and window damage.

Hamilton County

3 S Ellsworth 26 1500CST 0 0 Hail (0.75)

Hamilton County

Randall 26 1500CST 0 0 Hail (0.75)

Story County

2 NE Roland 26 1515CST 0 0 2K Hail (0.88)

A cold front moved southeast across the state during the morning and early afternoon hours. A secondary cold front dropped into central Iowa during the mid afternoon hours. Though most of the moisture had been pushed southeast of the area following the first front, dew point temperatures did pool into the low to mid 50s just ahead of the secondary front. This in combination with a strong upper level jet max sweeping southeast into the state set the stage for a narrow line of thunderstorms to develop. A small cluster of thunderstorms became marginally severe and produced pea to penny size hail in Hamilton County. The hail reportedly covered the ground east of Ellsworth. As the cell progressed south, hail the size of nickels covered the ground northeast of Roland.

IOWA, East Central and Southeast

Lee County

Montrose 26 1308CST 0 0 50K Hail (1.25)
1310CST

An upper level disturbance allowed thunderstorms to develop across Northeast Missouri, Southeast Iowa, and West Central Illinois during the afternoon. The storms produced spotty hail with a few funnel clouds. A meteorology professor at Western Illinois

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

IOWA, East Central and Southeast

University in Macomb, Illinois observed a rotating wall cloud move across the city from 1407 CST to 1412 CST. Fortunately, no tornadogenesis occurred.

IOWA, Northeast

NONE REPORTED.

IOWA, Northwest

NONE REPORTED.

IOWA, Southwest

NONE REPORTED.

KANSAS, East

Republic County

Munden 10 2027CST 0 0 Thunderstorm Wind (G52)

Cloud County

6 S Jamestown 10 2033CST 0 0 Thunderstorm Wind (G56)

KSZ008

Republic

10 2053CST 0 0 Flood

2100CST

Water was reported briefly over the roadway south of Courtland.

Cloud County

5 W Concordia 10 2126CST 0 0 Flash Flood

2346CST

Heavy rains caused runoff that overflowed highway 28 and caused it to be closed for several hours.

Ottawa County

Delphos 11 0130CST 0 0 Flash Flood

0140CST

Runoff from heavy rains caused flooding in northwestern Republic county for a time.

Cloud County

Concordia 10 2346CST 0 0 Flash Flood

11 0130CST

Several streets in Concordia were flooded and impassable from heavy rains. Highway 9 had water over the roadway in several areas including near Macyville, southwest of Concordia.

KSZ020-034

Cloud - Ottawa

11 0001CST 0 0 Flood

13 2000CST

Runoff from heavy rains on the evening of the 10th sent some rivers in Cloud and Ottawa counties into flood for several days. The river flooding was minor in most areas as the rivers crested only one to three feet above flood stage. However, the Solomon River near Glasco crested at 32.6 feet on the morning of the 12th. Flood stage at Glasco is 22.0 feet.

KANSAS, Extreme Southeast

Crawford County

Girard 01 1710CST 0 0 Flash Flood

1830CST

Law enforcement officials observed several streets and low water crossings flooded near the community of Girard

Bourbon County

Devon 26 1620CST 0 0 Hail (1.00)

Bourbon County

Garland 26 1710CST 0 0 Hail (0.75)

Crawford County

Arcadia 26 1745CST 0 0 Hail (0.75)

KANSAS, North Central

Rooks County

2 S Stockton 10 1544CST 0 0 25K 150K Hail (1.75)

Phillips County

Agra 10 1605CST 0 0 0 0 Hail (0.75)

Smith County

3 SE Athol 10 1638CST 0 0 0 0 Thunderstorm Wind (G52)

Smith County

Smith Center 10 1652CST 0 0 100K 0 Thunderstorm Wind (G53)

1702CST

Storm Data and Unusual Weather Phenomena

September 2003

		Time	Path	Path	Number of		Estimated		September 2003
Location	Date	Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	Character of Storm
<u>KANSAS, North Central</u>									
Smith County									
Smith Center	10	1652CST 1702CST			0	0	100K	0	Thunderstorm Wind (G53)
Rooks County									
Damar	10	1715CST			0	0	25K	150K	Hail (1.75)
Osborne County									
1 S Osborne	10	1735CST			0	0	0	0	Hail (0.75)
Jewell County									
2 S Webber	10	1747CST			0	0	25K	150K	Hail (1.75)
Osborne County									
1 W Osborne	10	1805CST			0	0	0	0	Hail (0.75)
Jewell County									
4 N Burr Oak	10	1807CST			0	0	10K	0	Thunderstorm Wind (G56)
Mitchell County									
Glen Elder	10	1945CST			0	0	100K	0	Thunderstorm Wind (G71)
Mitchell County									
Countywide	10 11	2045CST 0200CST			0	1	500K	500K	Flash Flood
KSZ019									
	Mitchell 11 12	0200CST 0000CST			0	0	500K	1M	Flood

Severe thunderstorms produced large hail, high winds and torrential rainfall across north-central Kansas. The extremely heavy rain resulted in widespread flooding across Mitchell county. Before the flooding began, the complex of thunderstorms had a history of producing winds in excess of 60 mph and hail to the size of golf balls. The largest hail was reported near Damar and Stockton in Rooks county, and around Webber in Jewell county. Winds of 60 to 80 mph were also reported and caused damage from Smith Center to Glen Elder. In Smith Center, a roof was torn from a church by the high wind while windows were blown out of a downtown business. Large tree limbs were reported down in the Glen Elder area. Electricity was lost to several locations throughout the night.

By late evening, radar estimates and reports from around Mitchell county began to paint a picture of torrential rainfall and widespread flooding across the county. About 8 inches of rain was reported in Beloit, with 8 to 12 inches measured south and east of town. Water was over Highway 14 south of Beloit. The road was blocked off for a time. There were reports of numerous bridges and roads under water or washed out from west of Beloit to the east end of the county along and near the Solomon River. At the Indian Creek Bridge about 2 miles west of Beloit, a farmer narrowly escaped death as his tractor collapsed the bridge and he was washed into the creek and eventually into the Solomon River. After being washed downstream by the raging current, the farmer grabbed a hold of some tree branches along the river and pulled himself to safety from the water. He suffered minor injuries from the ordeal.

The Solomon River was out of its banks from west of Beloit downstream to Simpson. The river crested around 25 feet at Beloit or about 5 feet above flood stage. The flow recorded by the USGS at Simpson on the eastern Mitchell county line was greater than the flow recorded in 1993. Throughout Mitchell county, economic losses due to soil erosion, crop flooding and structural damage to farmstead buildings totaled from 1 to 3 million dollars.

KANSAS, Northeast

Miami County

4 E Bucyrus	26	1432CST			0	0			Hail (0.75)
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KANSAS, Northwest

Gove County

4 W Gove	09	1500MST			0	0			Hail (1.75)
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Gove County

4 W Gove	09	1520MST			0	0			Hail (1.00)
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Gove County

2 W Gove	09	1524MST			0	0			Hail (0.75)
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Sheridan County

15 S Hoxie	09	1604MST			0	0			Hail (0.75)
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Sheridan County

4 E Hoxie	09	1615MST			0	0			Hail (1.00)
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Gove County

2 W Gove	09	1625MST			0	0			Hail (1.75)
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Gove County

Gove	09	1627MST			0	0			Hail (2.75)
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Gove County

Grainfield	09	1634MST			0	0			Hail (0.75)
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Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
<u>KANSAS, Northwest</u>									
Gove County									
Grainfield	09	1635MST			0	0			Hail (2.00)
Sheridan County									
3 E Hoxie	09	1652MST			0	0			Hail (1.75)
Sheridan County									
1 NE Hoxie	09	1700MST			0	0			Hail (0.88)
		Hail almost covered the ground.							
Wichita County									
Leoti	10	1400MST			0	0			Hail (0.75)
Graham County									
7 SE Hill City	10	1502MST			0	0			Hail (0.75)
Graham County									
6 SE Hill City	10	1502MST			0	0			Hail (1.00)
Graham County									
10 SE Hill City	10	1508MST			0	0			Hail (1.75)
Graham County									
4 SE Hill City	10	1510MST			0	0			Hail (1.75)
Graham County									
13 SSE Hill City	22	0100MST			0	0			Hail (0.75)
<u>KANSAS, Southeast</u>									
Lincoln County									
North Portion	10 11	2200CST 0300CST			0	0	84K	700K	Flash Flood
		Torrential rains, on the order of 2-4 inches per hour, caused flash flooding across approximately 108 square miles, primarily in Cedron and Orange townships as well as parts of Battle Creek, Hanover, and Grant townships. Land damage acreage: 26,250. Included in this affected acreage were 2,560 acres of milo and 640 acres of soybeans. Farm facilities damaged: 25 dams and 10 miles of fencing. Narrative provided by USDA Flash Situation Report.							
Sedgwick County									
Park City	11	0440CST 1155CST			0	0			Flash Flood
		KFDI reported North Broadway Avenue flooded from 77th Street North, thru 93rd Street North, to 101st Street North near the Sedgwick/Harvey County line.							
Butler County									
5 NW De Graff	11	0550CST 1435CST			0	0			Flash Flood
		County Line Road flooded 4 miles west of Highway 77 near Butler/Marion County line.							
Sedgwick County									
Wichita	11	0834CST 1155CST			0	0			Flash Flood
		The following were flooded: 13th Street/West Street intersection, 2nd Street/West Street intersection, 31st Street South/South Seneca intersection, and 2nd Avenue/Market Street Intersection in downtown Wichita.							
Russell County									
12 N Russell	11	0922CST 1130CST			0	0			Flash Flood
		Paradise Creek overflowed Highway 281 and adjacent fields.							
Butler County									
Andover	11	1000CST 1435CST			0	0			Flash Flood
		Meadowlark Elementary flooded. School closed.							
Butler County									
3 S Andover	11	1005CST 1435CST			0	0			Flash Flood
		East Kellogg/Butler Road intersection flooded.							
Butler County									
1 W Andover	11	1005CST 1435CST			0	0			Flash Flood
		Woman trapped in car at East Central/159th Street intersection near Terradyne Country Club. Rescue required.							
Butler County									
El Dorado	11	1005CST 1435CST			0	0			Flash Flood
		Numerous roads and highways flooded.							

Storm Data and Unusual Weather Phenomena

September 2003

									September 2003
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>KANSAS, Southeast</u>									
Butler County 5 SW Augusta	11	1030CST 1435CST			0	0			Flash Flood
Santa Fe Lake Road flooded 2 miles south of Highway 54.									
Butler County 1 W Augusta	11	1030CST 1435CST			0	0			Flash Flood
Dike Road flooded 1/2 mile north of Highway 54.									
Butler County 5 N Augusta	11	1039CST 1435CST			0	0			Flash Flood
Southwest 50th/Ohio Street intersection barricaded.									
Butler County 3 SW El Dorado	11	1039CST 1435CST			0	0			Flash Flood
Southwest 20th/Hopkins Switch Road barricaded.									
Butler County Andover	11	1120CST 1435CST			0	0	10K		Flash Flood
Basements of 2 homes flooded. Extent of damage unknown, so initial damage estimate rough approximation until more details provided.									
Butler County 8 NW Towanda to 11 NW Towanda	11	1130CST 1435CST			0	0			Flash Flood
Tawakoni Road flooded from 5 miles north of Highway 254 to Northwest 30th Street. Flood depth averaged 2 feet.									
Butler County Haverhill	11	1145CST 1435CST			0	0			Flash Flood
Highway K-96/Haverhill Road intersection flooded.									
Butler County 5 N El Dorado	11	1215CST 1435CST			0	0			Flash Flood
Walnut River bridge submerged 1/4 mile west of Highway 77.									
Russell County 2 S Russell	22	0010CST			0	0			Hail (0.75)
Ellsworth County 1 SW Holyrood	22	0042CST			0	0			Hail (0.88)
Rice County 1 N Lyons	22	0110CST			0	0			Hail (0.88)
Mcpherson County Inman	22	0140CST			0	0			Thunderstorm Wind (G52)
Harvey County 1 E Newton	22	0209CST			0	0			Thunderstorm Wind (G52)
Reno County 6 E Hutchinson	22	0324CST			0	0			Hail (0.88)
Reno County 5 W Hutchinson	22	0357CST			0	0			Hail (1.00)
Harvey County 2 N Halstead	22	0358CST			0	0			Hail (0.75)
Marion County Goessel	22	0405CST			0	0			Thunderstorm Wind (G53)
KSN Weatherlab.									
Reno County 1 N Hutchinson	22	0413CST			0	0			Hail (0.75)
Sedgwick County 2 NE Wichita	22	0416CST			0	0			Hail (1.00)
Radio station KFDL.									
Sedgwick County Park City	22	0417CST			0	0			Hail (1.00)
Radio station KFDL.									
Sedgwick County 2 NE Wichita	22	0419CST			0	0			Hail (1.00)

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
Killed	Injured	Property	Crops						
<u>KANSAS, Southeast</u>									
Sedgwick County									
Kechi	22	0422CST			0	0			Hail (0.75)
Butler County									
Andover	22	0430CST			0	0			Hail (0.75)
Butler County									
Andover	22	0430CST			0	0			Hail (1.00)
Sedgwick County									
Mt Hope	22	0433CST			0	0			Hail (0.75)
Sedgwick County									
Mt Hope	22	0433CST			0	0			Thunderstorm Wind (G52)
Butler County									
Andover	22	0436CST			0	0			Hail (0.75)
Sedgwick County									
Derby	22	0437CST			0	0			Hail (1.00)
Butler County									
2 N Rose Hill	22	0440CST			0	0			Hail (0.88)
Kingman County									
4 E Penalosa	22	0445CST			0	0			Hail (0.75)
Butler County									
Douglass	22	0455CST			0	0			Hail (0.88)
Sedgwick County									
3 E Wichita	22	0500CST			0	0			Hail (1.00)
Chautauqua County									
2 S Hale	26	1740CST			0	0			Hail (1.50)
Montgomery County									
2 S Independence	26	1753CST			0	0			Thunderstorm Wind (G54)
A six inch diameter tree limb had been blown out of a tree.									
Montgomery County									
2 N Caney	26	1802CST			0	0			Thunderstorm Wind (G60)
Montgomery County									
Caney	26	1804CST			0	0			Hail (0.75)
Montgomery County									
Caney	26	1804CST			0	0			Thunderstorm Wind (G60)
<u>KANSAS, Southwest</u>									
Morton County									
10 NW Richfield	09	1500CST			0	0			Hail (0.75)
Stanton County									
3 E Johnson	09	1514CST			0	0			Hail (0.88)
Grant County									
8 W Ulysses	09	1545CST			0	0			Hail (0.75)
Kearny County									
12 SW Lakin	09	1552CST			0	0			Hail (1.00)
Grant County									
4 NW Ulysses	09	1554CST			0	0			Hail (0.88)
Kearny County									
3 N Deerfield	09	1605CST			0	0			Hail (1.00)
Kearny County									
1 SE Lakin	09	1615CST			0	0			Hail (1.00)
Finney County									
1 S Friend	09	1618CST			0	0			Hail (0.88)
Grant County									
9 N Ulysses	09	1633CST			0	0			Hail (1.75)
Scott County									
2 E Scott City	09	1649CST			0	0			Hail (0.88)
Scott County									
Scott City	09	1700CST			0	0			Hail (1.00)
Stanton County									
8 N Big Bow	09	1755CST			0	0			Hail (1.75)
Kearny County									
14 SW Lakin	09	1807CST			0	0			Hail (1.00)

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
Killed	Injured	Property	Crops						
<u>KANSAS, Southwest</u>									
Morton County									
10 W Richfield	10	0055CST			0	0			Thunderstorm Wind (G65)
Morton County									
18 NNE Elkhart	10	0125CST			0	0			Hail (0.88)
Stanton County									
Johnson	10	0136CST			0	0			Thunderstorm Wind (G53)
Ford County									
1 E Dodge City	10	0342CST			0	0			Thunderstorm Wind (G56)
Measured by backup wind equipment.									
Ness County									
10 SW Ness City	10	0345CST			0	0			Thunderstorm Wind (G51)
Finney County									
Garden City	10	0300CST			0	0			Thunderstorm Wind (G56)
Two to three diameter limbs were blown down.									
Ness County									
4 NW Ransom	10	1510CST			0	0			Hail (0.75)
Hodgeman County									
13 NE Jetmore	10	1515CST			0	0			Hail (1.00)
Ellis County									
11 SW Hays	10	1525CST			0	0			Hail (0.75)
Ness County									
7 SW Bazine	10	1530CST			0	0			Hail (1.25)
Ness County									
2 W Bazine	10	1545CST			0	0			Hail (1.50)
Trego County									
4 N Trego Center	10	1551CST			0	0			Hail (0.75)
Clark County									
8 SW Minneola	10	1600CST			0	0			Hail (1.00)
Rush County									
7 N Mc Cracken	10	1600CST			0	0			Hail (0.88)
Clark County									
1 E Minneola	10	1610CST			0	0			Hail (0.75)
Meade County									
6 NE Fowler	10	1615CST			0	0			Hail (0.88)
Ford County									
9 S Dodge City	10	1645CST			0	0			Hail (1.00)
Pawnee County									
6 WNW Garfield	10	1650CST			0	0			Hail (1.00)
Edwards County									
10 N Kinsley	10	1653CST			0	0			Hail (0.75)
Pawnee County									
19 SW Larned	10	1700CST			0	0			Hail (0.88)
Rush County									
7 N Mc Cracken	10	1700CST			0	0			Hail (1.50)
Rush County									
7 N Mc Cracken	10	1700CST			0	0			Thunderstorm Wind (G52)
Hodgeman County									
4 SE Hanston	10	1705CST			0	0			Hail (1.00)
Ness County									
9 NE Ness City	10	1710CST			0	0			Thunderstorm Wind (G56)
Ellis County									
8 S Hays	10	1715CST			0	0			Thunderstorm Wind (G52)
Two inch diameter tree limbs were blown down.									
Rush County									
6 N Mc Cracken to	10	1800CST			0	0			Flash Flood
7 N Mc Cracken	11	0200CST							
Water was reported over many roads.									
Haskell County									
Sublette	10	1858CST			0	0			Thunderstorm Wind (G53)

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
KANSAS, Southwest									
Gray County Copeland	10	1917CST			0	0			Thunderstorm Wind (G61)
			Three inch diameter tree limbs were blown down.						
Ellis County Hays	10	2000CST			0	0			Flash Flood
	11	0300CST							
			Numerous county roads were flooded.						
Gray County 4 N Ensign	10	2040CST			0	0			Thunderstorm Wind (G56)
Ness County 15 NNE Bazine	10	2055CST			0	0			Flash Flood
	11	0200CST							
			Many roads in the northeast corner of the county had two to three feet of water flowing over them.						
Ellis County Hays	10	1720CST			0	2			Lightning
			Two Fort Hays students (female) received minor injuries when light struck a tree about 20 feet away. They were treated and released from an area hospital.						
Morton County 7 SE Richfield	20	1540CST 1542CST			0	0			Hail (0.88)
Morton County 6 N Rolla	20	1545CST			0	0			Hail (1.75)
Morton County 9 N Rolla	20	1545CST			0	0			Hail (1.00)
Stevens County 5 NW Feterita	20	1610CST			0	0			Hail (1.50)
Stevens County 12 NW Hugoton	20	1612CST			0	0			Hail (0.75)
Stevens County 6 SW Woods	20	1715CST			0	0			Hail (0.88)
Stevens County 8 SW Woods	20	1726CST			0	0			Hail (1.50)
Seward County 7 W Liberal	20	1815CST			0	0			Hail (0.88)
Ellis County 6 NW Schoenchen	22	0258CST			0	0			Hail (0.88)
Rush County Liebenthal	22	0305CST			0	0			Hail (0.75)
Stafford County 6 E Hudson	22	0345CST			0	0			Hail (0.88)
			Leaves were stripped from the trees						
Ellis County 10 W Hays	22	0405CST			0	0			Hail (0.88)
Ellis County Hays	22	0414CST			0	0			Hail (0.88)
Rush County 6 NW Otis	22	0430CST			0	0			Hail (0.88)
Rush County 2 SE Loretta	22	0433CST			0	0			Hail (0.88)
KENTUCKY, Central									
Taylor County Countywide	02	1200EST 1340EST			0	0			Flash Flood
			Mt. Carmel Road and Palestine Road were covered with water. Gilboa Road was closed due to high water. Taylors Chapel Road was covered with flowing water and mud and was closed.						
Ohio County Hartford	03	1600EST 1700EST			0	0			Flash Flood
			Mount Vernon Road, Lake Lane, and Round Hill Road were all closed and barricaded due to high water.						

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>KENTUCKY, Central</u>									
Larue County									
Athertonville	03	1910EST 2010EST			0	0			Flash Flood
The Rolling Fork River was out of its banks and approaching the doors of some homes.									
Barren County									
Countywide	03	2100EST 2300EST			0	0			Flash Flood
Several roads were covered with water and closed countywide.									
KYZ045									
Nelson	04	0410EST			0	0			Flood
06	0600EST								
The Rolling Fork River at Boston crested at 38.8 feet at 5 AM EST on September 5. Flood stage at Boston is 35 feet. At the crest level, agricultural bottomland is flooded.									
Jefferson County									
Valley Station	27	0105EST			0	0			Thunderstorm Wind (G50)
Numerous large limbs were downed.									
Jefferson County									
Prospect	27	0115EST			0	0			Thunderstorm Wind (G60)
A large tree was downed across Highway 1694 between Crestwood and Prospect.									
Meade County									
Payneville	27	0133EST			0	0			Thunderstorm Wind (G50)
Trees were downed.									
<u>KENTUCKY, Eastern</u>									
Wayne County									
Countywide	01	0010EST 0200EST			0	0	0	0	Flash Flood
Many roads were under water and trees were washed away. High water stranded some people.									
Clay County									
Countywide	01	0050EST 0230EST			0	0	0	0	Flash Flood
Several roads were covered in water.									
Clay County									
1.5 ESE Deer Lick to Manchester	04	0400EST 0800EST			0	0	20K	0	Flash Flood
Highway 687 was flooded for a seven to ten mile stretch, with several areas at least three feet deep. Several cars were partially submerged, ruining the engines. Several roads were also underwater in Manchester.									
Owsley County									
1 S Island City	04	0404EST 0715EST			0	0	0	0	Flash Flood
Eight to ten inches of water were over Route 1350. Water also flowed across driveways and into a barn.									
Laurel County									
London	04	0510EST 0700EST			0	0	20K	0	Flash Flood
The following roads were closed due to flash flooding: East Fourth Street at Tobacco Road, Tobacco Road from Green Street to Roosevelt Street, Middleground Way, Commercial Drive, and Spring Street. Water was reported to be as high as the fender wells on cars. One home was flooded along with several businesses.									
Breathitt County									
Countywide	04	0600EST 0730EST			0	0	100K	0	Flash Flood
Several trailer homes had water flooded in them at Low Hollow, along Kentucky Highway 30, about 2 miles southwest of Jackson. Several people were left temporarily homeless. Water was over the road at Caney Fork. The rushing floodwaters washed out bridge supports, shifted wooden bridges, and submerged several vehicles as water and mud fell from hillsides. An access tunnel road cut under railroad tracks was submerged along Kentucky Highway 52. Also along Kentucky Highway 52, a portion of a hillside fell onto the road near Chenowee, and closed both lanes. Along Kentucky Highway 30, a driver of a delivery truck drove through high water, and drove off the side of the road into a water-filled ditch, causing the truck to turn on its side. The driver was not injured, but merchandise was destroyed. Several roads were covered in water, including Wolverine Road, Highway 1098 (Southfork), and several roads off of Highway 1110. Trees were washed away countywide. Culverts were washed out on Clover Fork and Caney Fork. Two feet of water was reported at the junction of Kentucky Highway 30 and Route 397, and was up to the headlights of a pickup truck. Culverts were also washed out on Frozen Fork, along Route 205.									
KYZ114									
Owsley	04	0830EST			0	0	0	0	Landslide
There were two landslides blocking Kentucky Highway 11 near the Clay County line.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

KENTUCKY, Eastern

Pike County

3 NE Pikeville

04

0830EST
1030EST

0

0

0

0

Flash Flood

A few roads were covered with up to six inches of water. Several low water crossing bridges were under water. School was subsequently cancelled due to flooded roads.

Breathitt County

2 N Dalesburg

16

1315EST

0

0

0

0

Hail (0.75)

Three quarter inch hail was reported at Long's Creek from a co-operative observer.

KENTUCKY, Northeast

NONE REPORTED.

KENTUCKY, Northern

NONE REPORTED.

KENTUCKY, Southwest

McLean County

Livermore to
Island

02

1500CST
1600CST

0

0

Heavy Rain

Water was reportedly 6 to 8 inches deep over Highway 2110 for a 75-foot stretch between Livermore and Island.

Daviess County

Owensboro

03

0400CST
0800CST

0

0

Heavy Rain

Heavy rain flooded typical problem areas near Kentucky Wesleyan College. The saturation and softening of the ground weakened the hold of roots, causing large trees to tip over. Standing water in roadways caused vehicles to stall and become stranded on Carter Road and Millers Mill Road.

LAKE ERIE

Dunkirk To Buffalo

Ny

Dunkirk

22

1951EST

0

0

Marine Tstm Wind

Ripley To Dunkirk Ny

Dunkirk

22

1951EST

0

0

Marine Tstm Wind

Dunkirk To Buffalo

Ny

Dunkirk

23

0857EST

0

0

Marine Tstm Wind

Ripley To Dunkirk Ny

Dunkirk

23

0857EST

0

0

Marine Tstm Wind

Dunkirk To Buffalo

Ny

Dunkirk

23

0902EST

0

0

Marine Tstm Wind

Ripley To Dunkirk Ny

Dunkirk

23

0902EST

0

0

Marine Tstm Wind

Avon Point To

Willowick Oh

Avon Point to

26

2300EST

0

0

Marine Tstm Wind

Willowick

27

0030EST

Geneva On The Lake

Oh To Conneaut Oh

Geneva-On-The-Lake to

26

2300EST

0

0

Marine Tstm Wind

Conneaut

27

0030EST

Le Avon Pt To

Willowick Oh Byd

5Nm Offshore To Intl

Border

Avon Point to

26

2300EST

0

0

Marine Tstm Wind

Willowick

27

0030EST

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
LAKE ERIE									
Le Geneva On The Lake To Conneaut Oh Byd 5Nm Offshore To Intl Border									
Geneva-On-The-Lake to Conneaut	26 27	2300EST 0030EST			0	0			Marine Tstm Wind
Le Reno Beach To The Islands Oh Byd 5Nm Offshore To Intl Border									
Reno Beach to The Islands	26 27	2300EST 0030EST			0	0			Marine Tstm Wind
Le The Islands To Vermilion Oh Byd 5Nm Offshore To Intl Border									
The Islands to Vermilion	26 27	2300EST 0030EST			0	0			Marine Tstm Wind
Le Vermilion To Avon Pt Oh Byd 5Nm Offshore To Intl Border									
Avon Point	26 27	2300EST 0030EST			0	0			Marine Tstm Wind
Le Willowick To Geneva On The Lake Oh Byd 5Nm Offshore To Intl Border									
Willowick to Geneva-On-The-Lake	26 27	2300EST 0030EST			0	0			Marine Tstm Wind
Reno Beach To The Islands Oh									
Reno Beach to The Islands	26 27	2300EST 0030EST			0	0			Marine Tstm Wind
The Islands To Vermilion Oh									
The Islands to Vermilion	26 27	2300EST 0030EST			0	0			Marine Tstm Wind
Vermilion To Avon Point Oh									
Vermilion to Avon Point	26 27	2300EST 0030EST			0	0			Marine Tstm Wind
Willowick To Geneva On The Lake Oh									
Willowick to Geneva-On-The-Lake	26 27	2300EST 0030EST			0	0			Marine Tstm Wind
Strong thunderstorms moved east across Lake Erie and produced wind gusts in excess of 35 knots.									
Ripley To Dunkirk Ny									
Dunkirk	27	0326EST			0	0			Marine Tstm Wind
Dunkirk To Buffalo Ny									
Dunkirk	27	0335EST			0	0			Marine Tstm Wind
Buffalo Hbr And Upri Niagara R									
Grand Island	27	0405EST			0	0			Marine Tstm Wind
Willowick To Geneva On The Lake Oh									
Willowick to Geneva-On-The-Lake	28	1704EST			0	0			Waterspout

A waterspout was observed on Lake Erie three miles north of Fairport Harbor moving east. No damage occurred.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

LAKE ERIE

Avon Point To

Willowick Oh

Avon Point to Willowick	28	1730EST 1900EST			0	0			Marine Tstm Wind
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Conneaut Oh To

Ripley Ny

Ripley Ny	28	1730EST 1900EST			0	0			Marine Tstm Wind
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Geneva On The Lake

Oh To Conneaut Oh

Geneva-On-The-Lake to Conneaut	28	1730EST 1900EST			0	0			Marine Tstm Wind
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Le Avon Pt To

Willowick Oh Byd

5Nm Offshore To Intl

Border

Avon Point to Willowick	28	1730EST 1900EST			0	0			Marine Tstm Wind
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Le Conneaut Oh To

Ripley Ny Byd 5Nm

Offshore To Intl

Border

Conneaut to Ripley Ny	28	1730EST 1900EST			0	0			Marine Tstm Wind
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Le The Islands To

Vermilion Oh Byd

5Nm Offshore To Intl

Border

The Islands to Vermilion	28	1730EST 1900EST			0	0			Marine Tstm Wind
-----------------------------	----	--------------------	--	--	---	---	--	--	------------------

Le Vermilion To Avon

Pt Oh Byd 5Nm

Offshore To Intl

Border

Vermilion to Avon Point	28	1730EST 1900EST			0	0			Marine Tstm Wind
----------------------------	----	--------------------	--	--	---	---	--	--	------------------

Le Willowick To

Geneva On The Lake

Oh Byd 5Nm Offshore

To Intl Border

Willowick to Geneva-On-The-Lake	28	1730EST 1900EST			0	0			Marine Tstm Wind
------------------------------------	----	--------------------	--	--	---	---	--	--	------------------

The Islands To

Vermilion Oh

The Islands to Vermilion	28	1730EST 1900EST			0	0			Marine Tstm Wind
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Vermilion To Avon

Point Oh

Vermilion to Avon Point	28	1730EST 1900EST			0	0			Marine Tstm Wind
----------------------------	----	--------------------	--	--	---	---	--	--	------------------

Willowick To Geneva

On The Lake Oh

Willowick to Geneva-On-The-Lake	28	1730EST 1900EST			0	0			Marine Tstm Wind
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Strong thunderstorms moved east across Lake Erie and produced wind gusts in excess of 35 knots.

Willowick To Geneva

On The Lake Oh

Willowick to Geneva-On-The-Lake	29	1741EST 1750EST			0	0			Waterspout
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A waterspout was observed on Lake Erie just offshore from Eastlake moving northeast. The waterspout persisted for several minutes, but caused no damage.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

LAKE ERIE

Willowick To Geneva

On The Lake Oh

Willowick to
Geneva-On-The-Lake

29

1746EST
1750EST

0

0

Waterspout

A waterspout was observed on Lake Erie just offshore from Mentor moving northeast. No damage occurred.

LAKE HURON

Presque Isl Lt To

Sturgeon Pt Mi

Black River

03

1616EST

0

0

Marine Tstm Wind

Lh Presque Isl Lt To

Alabaster Mi Ewd

Byd 5Nm Offshore To

Intl Border

12 NE Sturgeon Point

03

1622EST

0

0

Marine Tstm Wind

5Nm E Of Mackinac

Bridge To Presque

Isle Lt Mi

Presque Isle Light

30

1852EST

0

0

Marine Tstm Wind

Lh 5Nm E Of

Mackinac Bridge To

Presque Isl Lt Mi

Ewd Byd 5Nm

Offshore To Intl

Border

7 N Presque Isle Light

30

1852EST

0

0

Marine Tstm Wind

Lh Presque Isl Lt To

Alabaster Mi Ewd

Byd 5Nm Offshore To

Intl Border

7 E Presque Isle Light

30

1852EST

0

0

Marine Tstm Wind

Presque Isl Lt To

Sturgeon Pt Mi

Presque Isle Light

30

1852EST

0

0

Marine Tstm Wind

LAKE MICHIGAN

Grand Haven To

Whitehall Mi

Muskegon Harbor

15

0705EST

0

0

Marine Tstm Wind

The coastal observing station in Muskegon harbor recorded a peak wind gust to 38 knots.

Grand Traverse Lt To

Sleeping Bear Pt Mi

3 N Leland

15

1322EST

0

0

Waterspout

Lm 5Nm W Of

Mackinac Bridge To

Manistee Mi Nwd

Beyond 5Nm Offshore

To Mid Line Of Lake

12 S South Fox Island

15

1322EST

0

0

Waterspout

Norwood Mi To 5Nm

W Of Mackinac

Bridge

1 NW Norwood

15

1322EST

0

0

Waterspout

Sleeping Bear Pt To

Manistee Mi

Sleeping Bear Point

15

1322EST

0

0

Waterspout

South Haven To

Holland Mi

Saugatuck Harbor to

Saugatuck Dnes St Prk

22

1930EST

0

0

Marine Tstm Wind

A measured peak wind gust to 35 knots was recorded by a coastal observation station in Saugatuck.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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LAKE MICHIGAN

Grand Haven To Whitehall Mi

Grand Haven Harbor	23	0215EST 0245EST			0	0	5K		Marine Tstm Wind
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A report of a peak wind gust to 45 knots was received from Grand Haven.

Holland To Grand Haven Mi

Holland Harbor	23	0215EST 0245EST			0	0	5K		Marine Tstm Wind
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A measured peak wind gust to 47 knots was recorded by an automated surface observation station on top of a condominium complex in Holland, along the shore of Lake Michigan.

Holland To Grand Haven Mi

Holland Harbor	23	0405EST 0425EST			0	0			Marine Tstm Wind
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A peak wind gust to 36 knots was reported at the Holland State Park.

Lm 5Nm W Of Mackinac Bridge To Manistee Mi Nwd Beyond 5Nm Offshore To Mid Line Of Lake 8 NE Charlevoix Norwood Mi To 5Nm W Of Mackinac Bridge

5 W Petoskey	27	1454EST			0	0			Waterspout
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LAKE ONTARIO

Niagara R To Thirty Mile Pt Ny

Thirty Mile Point	27	0435EST			0	0			Marine Tstm Wind
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LAKE SUPERIOR

Munising To Grand Marais Mi

2 NE Grand Is. Harbor Grand Is. Harbor Lt	30	1015EST 1017EST			0	0			Waterspout
--	----	--------------------	--	--	---	---	--	--	------------

Two waterspouts were sighted just northeast of the North Light on Grand Island. These waterspouts were formed by very cold air flowing over the relatively warmer waters of central Lake Superior.

LOUISIANA, Northeast

NONE REPORTED.

LOUISIANA, Northwest

NONE REPORTED.

LOUISIANA, Southeast

Tangipahoa Parish 1 E Arcola

	13	1310CST			0	0	0.50K		Thunderstorm Wind (G50)
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A large tree was blown down in the vicinity of Town Road and Highway 10.

LOUISIANA, Southwest

Lafayette Parish Lafayette

	13	1800CST 2000CST			0	0	25K		Flash Flood
--	----	--------------------	--	--	---	---	-----	--	-------------

Around three inches of rain fell in less than an hour, resulting in street flooding across the city of Lafayette.

Calcasieu Parish Vinton

	21	1330CST			0	0	15K		Thunderstorm Wind (G50)
--	----	---------	--	--	---	---	-----	--	-------------------------

Several homes received structural damage as high winds battered the region.

MAINE, North

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

MAINE, South

**MEZ018>019-
023>028**

Interior York - Interior Cumberland - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo

23 1300EST 0 0 4K Strong Wind
1900EST

Strong, gusty south winds downed tree limbs onto power lines causing scattered power outages. About 5700 customers were affected by power outages, mostly in the Portland, Brunswick, and Rockland areas. Winds gusted to 35 mph (measured) at Portland and 33 mph (measured) at Brunswick.

MARYLAND, Central

NOT RECEIVED.

MARYLAND, Northeast

Cecil County

Northwest Portion 15 1700EST 0 0 Flash Flood
2000EST

Extremely heavy rain across Chester County forced operators at the Octoraro Reservoir in Chester County to open gates at that site. This caused downstream flooding along the Octoraro Creek in northwestern Cecil County.

Caroline County

Countywide 18 1100EST 0 0 Heavy Rain
2300EST

Talbot County

Countywide 18 1100EST 0 0 Heavy Rain
2300EST

Queen Anne'S County

Countywide 18 1200EST 0 0 Heavy Rain
19 0000EST

Kent County

Countywide 18 1300EST 0 0 Heavy Rain
19 0100EST

Cecil County

Countywide 18 1400EST 0 0 Heavy Rain
19 0200EST

**MDZ012-015-
019>020**

Kent - Queen Annes - Talbot - Caroline
18 1400EST 0 0 Tropical Storm
19 0500EST

MDZ008

Cecil
18 1600EST 0 0 High Wind (G50)
19 0500EST

**MDZ008-012-015-
019>020**

Cecil - Kent - Queen Annes - Talbot - Caroline
19 0000EST 0 0 Storm Surge
1700EST

Tropical Storm Isabel caused a record breaking tide and storm surge up the Chesapeake Bay, heavy rain and strong power outage producing winds. Isabel made landfall as a hurricane near Drum Inlet, North Carolina around 100 p.m. EDT on the 18th and weakened as it tracked farther inland. At one time in its life cycle, it was a powerful Category 5 hurricane when it was north of the Leeward Islands. Isabel's track took it west of the bay and was able to funnel water into the bay. This caused flooding along coastal areas into Cecil County. A record breaking high tide of 7.91 feet above mean lower low water was observed at Tolchester Beach (Kent County). The surge was 6.88 feet. Tidal flooding problems began after Midnight EDT on the 19th and continued throughout the day on the 19th. The surge was so strong that it negated the normal tide cycle in the bay. Evacuations occurred near the bay. For example, in Kent County emergency management officials evacuated residents along Eastern Neck Road (State Route 455) from Rock Hall to the Eastern Neck Island. Tidal flooding occurred in and around Rock Hall, Chestertown, Skinners Neck, Piney Neck and Cliffs City. Tidal flooding carried inland on the Chester River to Chestertown. Over 100 homes, vehicles and boats were damaged and/or ruined. In addition, eleven marinas, three restaurants, two hotels, two Bed and Breakfast facilities, one boat building business and one marine railway reported major damage. The heavy rain did not coincide with the tidal flooding and occurred mainly from the afternoon of the 18th into the early morning of the 19th. There were no reports of stream related flooding due to the heavy rain. Because the heaviest rain with tropical systems often falls west of its storm track, the region was spared heavier rain. On the other hand, the strongest winds are often on the right side of the storm track. Winds gusted up to 58 mph in the bay and caused numerous trees, tree limbs and power lines to be knocked down. This was one of the worst power outage events in history for Conectiv Energy. About 65,750 homes and businesses lost power with half of the outages in Cecil County.

Peak wind gusts included 58 mph in Cambridge (Dorchester County), 55 mph at the Baltimore-Washington International Airport and 44 mph in Tolchester Beach. Storm totals included 3.40 inches in Federalsburg (Caroline County), 3.13 inches in Denton (Caroline

Storm Data and Unusual Weather Phenomena

September 2003

September 2003										
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
<u>MARYLAND, Northeast</u>										
			County), 2.97 inches in Saint Michaels (Talbot County), 2.14 inches in Stevensville (Queen Anne's County) and 2.03 inches at the Conowingo Dam (Cecil County).							
Kent County Countywide	23	0500EST 0545EST			0	0				Thunderstorm Wind (G50)
Queen Anne'S County Countywide	23	0500EST 0545EST			0	0				Thunderstorm Wind (G50)
			A line of severe thunderstorms knocked down several trees and wires throughout Kent and Queen Anne's Counties. The worst reported damage was in Kennedyville in Kent County and Queenstown in Queen Anne's County.							
Talbot County Easton	23	0545EST			0	0				Thunderstorm Wind (G52)
			A line of severe thunderstorms knocked down trees and wires and damaged a chicken coop in Easton.							
<u>MARYLAND, South</u>										
			NOT RECEIVED.							
<u>MARYLAND, West</u>										
Garrett County Gorman	01	1820EST 1920EST			0	0				Flash Flood
			Route 560 flooded.							
MDZ001 Garrett	18	2330EST			0	0	5K			High Wind (G52)
			Remnants of Hurricane Isabel caused wind gusts in the neighborhood of 60 mph, knocking down trees and utility lines. Isabel passed over Pittsburgh Pa around 8 AM EDT on the 19th. Wind gusts from Isabel started after 7 PM on the 18th and continued, from time to time, through the afternoon of the 19th.							
Garrett County Oakland	19	0115EST 0415EST			0	0				Flash Flood
			After nearly 6 inches of rain, streams overflowed and flooded many roads around Oakland							
MDZ001 Garrett	19	0345EST 0700EST			0	0				Flood
			Numerous roads remain flooded between Oakland and Grantsville							
Garrett County Oakland	27	1534EST			0	0				Hail (0.75)
Garrett County Swanton	27	1542EST			0	0				Hail (1.00)
<u>MASSACHUSETTS, Central and East</u>										
Hampden County Granville to Blandford	23	1010EST			0	0	5K			Thunderstorm Wind (G50)
Hampden County Southwick to Westfield	23	1053EST 1300EST			0	0	15K			Flash Flood
Hampshire County Northampton to Amherst	23	1100EST 1300EST			0	0	10K			Flash Flood
			A severe thunderstorm downed large tree limbs in Granville and Blandford. Torrential rainfall from the thunderstorm cause significant urban flooding. Several roads were closed due to flooding, including part of Route 202 in Southwick. In Springfield, eight people were rescued after they became stranded in flooded vehicles. In Westfield, flooding closed the intersection of Springfield Road and East Mountain Road, where three feet of water covered the road. In Northampton, North Street was closed due to flooding. Police closed off several roads in Springfield temporarily, including the Dwight Street exit from I-291, Tapley Street, Parker Street, Roosevelt Avenue, and Tiffany Street. In Holyoke, flooding affected the underpasses at Commercial, Sergeant, Mosier, and Bower Streets. Other hard hit areas included Hampshire Street, Route 5, and Bemis Road.							
Hampden County Agawam to Westfield	28	1100EST 1800EST			0	0	20K			Flash Flood
Hampshire County Easthampton to Northampton	28	1300EST 1800EST			0	0	15K			Flash Flood

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

MASSACHUSETTS, Central and East

Franklin County

Greenfield 28 1400EST
1800EST 0 0 10K **Flash Flood**

Torrential rainfall caused flash flooding in the Connecticut River Valley. Nearly 4 inches of rain fell in a few hours, causing significant urban flooding from Agawam to Northampton. Several roads were closed in Westfield, Agawam, Chicopee, West Springfield, Easthampton, and Northampton where flood waters rose up to the doors of vehicles. In Greenfield, the Green River rose out of its banks and forced the closure of Nash's Mill Road between Colrain and Leyden Roads.

Hampden County

Westfield 29 1542EST 0 0 **Hail (0.75)**

A severe thunderstorm produced dime sized hail in Westfield.

MASSACHUSETTS, West

NONE REPORTED.

MICHIGAN, East

Lenawee County

4 E Addison 24 1835EST 0 0 **Thunderstorm Wind (G54)**

A trained weather spotter reported 16 inch diameter tree limbs down.

Lenawee County

3 NW Onsted 24 1835EST 0 0 **Thunderstorm Wind (G52)**

A trained weather spotter estimated 60 mph thunderstorm wind gusts.

Lenawee County

Addison 24 1855EST 0 0 **Thunderstorm Wind (G56)**

Spotters reported trees blown down.

Lenawee County

Onsted 24 1855EST 0 0 **Thunderstorm Wind (G56)**

A trained weather spotter reported trees blown down.

MICHIGAN, Extreme Southwest

Hillsdale County

8 NE Hillsdale 24 1750EST 0 0 0 **Thunderstorm Wind (G50)**

Emergency management reported trees down northeast of Hillsdale.

Hillsdale County

North Adams 24 1800EST 0 0 0 **Thunderstorm Wind (G50)**

Emergency management reported trees down in North Adams.

MICHIGAN, North

Benzie County

2 S Frankfort 15 1204EST 0 0 **Hail (0.75)**

A strong upper level disturbance contributed to widespread thunderstorms. A large number of these produced small hail, though only one report of severe-criteria hail was received. Some waterspouts also occurred over nearby waters of the Great Lakes.

MICHIGAN, Upper

MIZ001

Keweenaw

19 1847EST 0 0 **High Wind (G60)**
2021EST

A deep surface low pressure system tracked from the northern plains across western Lake Superior on September 19. High winds developed over the Keweenaw Peninsula and over Lake Superior, as the low deepened and moved into Ontario. West winds gusted as high as 57 mph at Houghton, and the Stannard Rock lighthouse measured a sustained wind of 53 knots, or 61 mph, during the early evening. Broken trees and branches knocked down power lines with power outages lasting into the night in several communities.

MICHIGAN, West

Allegan County

Wayland 15 1108EST 0 0 5K **Hail (0.75)**

An isolated severe thunderstorm produced three quarters inch diameter hail in Wayland.

Barry County

Middleville 24 1630EST 0 0 5K **Hail (0.75)**

Three quarters inch hail was reported with an isolated severe thunderstorm two miles south of Middleville.

MINNESOTA, Central and South Central

Anoka County

Blaine 26 1530CST 0 0 **Funnel Cloud**

Near Lexington and 109th.

MINNESOTA, Northeast

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

MINNESOTA, Northwest

Polk County									
4 NW Eldred	17	0010CST			0	0			Hail (0.75)
Lake Of The Woods County									
Angle Inlet	17	0015CST			0	0			Hail (0.75)
Marshall County									
1 NE Gryla	17	0200CST			0	0			Hail (0.88)
Wilkin County									
5 SE Wolverton	17	1112CST			0	0			Hail (0.75)
Becker County									
.5 E Cormorant	17	1205CST			0	0			Hail (0.88)
Otter Tail County									
5 E Dunvilla	17	1218CST			0	0			Hail (1.00)
Becker County									
1 NW Cormorant	17	1240CST			0	0			Hail (0.75)
Polk County									
Crookston	17	1250CST			0	0			Hail (1.00)
Polk County									
5 NE Crookston	17	1300CST			0	0			Hail (0.88)
Lake Of The Woods County									
1 S Williams	17	1610CST			0	0			Hail (1.50)
Marshall County									
2 E Holt	17	1630CST			0	0			Hail (1.25)
Marshall County									
6 N Gatzke	17	1655CST			0	0			Hail (0.75)
Roseau County									
3 SE Pencer	17	1740CST			0	0			Hail (1.25)
Roseau County									
Warroad	17	1750CST			0	0			Hail (0.75)
Lake Of The Woods County									
Arnesen	17	1800CST			0	0			Hail (0.75)

MINNESOTA, Southeast

NONE REPORTED.

MINNESOTA, Southwest

NONE REPORTED.

MINNESOTA, West

NONE REPORTED.

MINNESOTA, West Central

NONE REPORTED.

MISSISSIPPI, Central

Jasper County									
Louin	09	1710CST			0	0	1K		Hail (0.75)

MISSISSIPPI, North

NONE REPORTED.

MISSISSIPPI, South

NONE REPORTED.

MISSISSIPPI, Southeast

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
MISSOURI, East									
Boone County									
Ashland	21	1605CST			0	0			Hail (0.75)
Boone County									
Ashland	21	1605CST			0	0			Thunderstorm Wind (G50)
Storm spotters reported 3/4 inch hail and wind gusts of 50 to 60 mph.									
Lewis County									
Canton	26	1350CST			0	0			Hail (1.25)
Officials at Lock and Dan 20 reported 1 1/4 inch hail.									
Ralls County									
6 E Rensselaer	26	1505CST			0	0			Thunderstorm Wind (G60)
A local golf course reported trees down.									
Marion County									
Hannibal	26	1510CST			0	0			Thunderstorm Wind (G55)
A few trees were reported down in Hannibal.									
Ralls County									
New London	26	1520CST			0	0			Thunderstorm Wind (G55)
The County Sheriff office reported trees down in New London.									
Boone County									
Columbia	26	1545CST			0	0			Hail (0.75)
Storm spotters reported 3/4 inch hail just north if I-70 in Columbia.									
Moniteau County									
Tipton	26	1600CST			0	0			Thunderstorm Wind (G60)
The County Sheriff office reported some traffic lights and wires down in Tipton.									
Moniteau County									
Clarksburg	26	1610CST			0	0			Thunderstorm Wind (G55)
Thunderstorm wind gusts broke a power pole on the northeast side of Clarksburg.									
Pike County									
5 N Clarksville	26	1615CST			0	0			Thunderstorm Wind (G55)
Amateur radio spotters reported trees down on Highway 79 north of Clarksville.									
Callaway County									
Fulton	26	1630CST			0	0			Thunderstorm Wind (G55)
Scattered trees and power lines were reported down in various parts of Fulton.									
Lincoln County									
Troy	26	1638CST			0	0			Thunderstorm Wind (G55)
Amateur radio spotters reported power lines down on the north side of Troy.									
St. Charles County									
Wentzville	26	1654CST			0	0			Thunderstorm Wind (G55)
The County Sheriff office reported trees down on Piney Road near Highway 40/61.									
St. Louis County									
Chesterfield	26	1712CST			0	0			Thunderstorm Wind (G55)
Local police reported a downed tree which fell on a power pole causing a power outage.									
St. Louis County									
Ferguson	26	1735CST			0	0			Thunderstorm Wind (G55)
Amateur radio spotters reported scattered trees down across North St. Louis County, primarily in the Ferguson area. One home suffered minor damage due to a downed tree.									
Franklin County									
1 W Sullivan	26	1815CST	0.2	50	0	0			Tornado (F0)
		1816CST							
The County Sheriff office reported a brief tornado just west of Sullivan along I-44. Some highway billboards were blown down and trees uprooted.									
Franklin County									
Sullivan	26	1820CST			0	0			Funnel Cloud
Franklin County									
Sullivan	26	1820CST			0	0			Hail (0.75)
Amateur radio spotters reported a funnel cloud and 3/4 inch hail in Sullivan.									
Franklin County									
Stanton	26	1830CST			0	0			Thunderstorm Wind (G60)
The County Sheriff office reported Highway billboards blown down along I-44 near Stanton.									
Jefferson County									
Pevely	26	1830CST			0	1			Thunderstorm Wind (G55)
Thunderstorm wind gusts caused problems at the Pevely Fall Festival. Several tents were blown down and booths damaged. One woman suffered minor injuries when she was struck by a tent pole.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
Killed	Injured									

MISSOURI, Lower

NONE REPORTED.

MISSOURI, Northeast

NONE REPORTED.

MISSOURI, Northwest

MOZ031-040-046

Carroll - Howard - Cooper

01 0100CST

0

0

Flood

02 0400CST

Heavy rains helped produce minor flooding on Moniteau Creek, Wakenda Creek, and Petite Saline Creek. Moniteau Creek near Fayette crested at 18.25 feet or 2.25 feet above flood stage. Wakenda Creek at Carrollton crested at 20.0 feet or right at flood stage. Petite Saline Creek near Boonville crested at 18.43 feet or 2.43 above flood stage.

Jackson County

2 N Blue Spgs

26

1355CST

0

0

Hail (0.75)

Lafayette County

Odessa

26

1415CST

0

0

Hail (1.50)

Lafayette County

Odessa

26

1415CST

0

0

Thunderstorm Wind (G52)

Cass County

Freeman

26

1450CST

0

0

Hail (0.75)

Henry County

3 NW Urich

26

1530CST

0

0

Hail (1.00)

Henry County

Clinton

26

1600CST

0

0

Hail (0.75)

MISSOURI, Southeast

Butler County

**Poplar Bluff to
3 N Poplar Bluff**

02

**1212CST
1600CST**

0

0

Flash Flood

Wayne County

Countywide

02

**1212CST
1400CST**

0

0

Flash Flood

Ripley County

**Oxly to
Naylor**

02

**1300CST
1600CST**

0

0

Flash Flood

Heavy rain, estimated from 1 to 2 inches in a few hours, fell over saturated ground. Flood control channels around Wappapello Lake along D Highway were full. A bridge was washed out on Tower Road north of Poplar Bluff. In Butler County, two water rescues were conducted on County Road 525 when two vehicles became stranded in floodwater. On the southwest side of Poplar Bluff, two 13-year-old boys who were playing along a creek got swept into the creek. The boys ended up in Cane Creek and were found a couple of hours later with only scratches. In Poplar Bluff, low areas near downtown were flooded, with 6 to 12 inches of water on many streets. Some streets were barricaded as several cars stalled out. There were two buildings with basements flooded. Highway 142 was partially covered by water. A co-operative observer in Poplar Bluff measured a four-day rainfall total from August 30 to September 2 of 6.66 inches. In Ripley County, high water swept a car off a low-water bridge near Oxly. The driver was briefly stranded on top of his vehicle. Several low water bridges and gravel roads were flooded in Ripley County. Water was over Highway 53 about 5 miles south of Poplar Bluff, Highway 60 west of Poplar Bluff, and the Hillard Bridge on W Highway. A few bridges were washed out on back roads in the Neelyville area.

Scott County

Countywide

02

**1315CST
1500CST**

0

0

Heavy Rain

Cape Girardeau

County

1 S Delta

02

**1700CST
1800CST**

0

0

Heavy Rain

Heavy rain on top of saturated ground caused low-lying flooding in Scott County. No property damage or road closures were reported. In Cape Girardeau County, Highway 25 was covered by water south of Delta, but no closure was reported. Rainfall was reported to be 0.75 inch per hour when the low-lying flooding occurred. Around 3 inches of rain fell in the previous 24 hours.

MISSOURI, Southwest

Morgan County

5 S Gravois Mills

01

**0200CST
0300CST**

0

0

Flash Flood

Law enforcement officials observed several county roads and low water crossings flooded over

Storm Data and Unusual Weather Phenomena

September 2003

		Time	Path	Number of		Estimated	September 2003	
Location	Date	Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops
Character of Storm								
MISSOURI, Southwest								
Camden County								
Climax Spgs	01	0700CST 0800CST			0	0		Flash Flood
Several low water crossings in the northwestern section of Camden County were inundated.								
Miller County								
Eldon	01	0730CST 0830CST			0	0		Flash Flood
A section of Highway Z was flooded over along with several area low water crossings.								
Morgan County								
Gravois Mills	01	1000CST 1100CST			0	0		Flash Flood
Law enforcement officials observed a flooded over section of Highway O.								
Texas County								
4 S Houston	14 15	2340CST 0100CST			0	0	10K	Flash Flood
Flash flood waters inundated a portion of Highway 63 south of the community of Houston. A dispatcher from the Texas County Sheriffs Office was washed off the road on her way home from work. A water rescue was performed.								
Morgan County								
Gravois Mills	18	1720CST			0	0		Thunderstorm Wind (G60)
Law enforcement officials observed several downed trees from severe thunderstorm wind gusts.								
Greene County								
4 S Ash Grove	21	1527CST			0	0		Hail (0.75)
Taney County								
Walnut Shade	21	1748CST			0	0		Hail (0.75)
Benton County								
Lincoln	21	1815CST 1930CST			0	0		Flash Flood
Several inches of water inundated a section of Highway 65. Numerous roads in and near the community of Lincoln experienced minor flooding.								
Morgan County								
Syracuse	26	1600CST			0	0		Hail (1.00)
St. Clair County								
Appleton City	26	1625CST			0	0		Hail (0.75)
Morgan County								
5 NE Versailles	26	1645CST			0	0		Thunderstorm Wind (G60)
Several large tree branches were snapped off of trees from severe thunderstorm wind gusts.								
Benton County								
Warsaw	26	1650CST			0	0	0.50K	Thunderstorm Wind (G60)
Numerous trees and power lines were downed from severe thunderstorm wind gusts.								
Benton County								
Fristoe	26	1705CST			0	0		Thunderstorm Wind (G60)
Several large tree limbs were downed from severe thunderstorm wind gusts.								
Vernon County								
Richards	26	1710CST			0	0		Thunderstorm Wind (G60)
Several trees were downed from severe thunderstorm wind gusts.								
Hickory County								
2 W Hermitage	26	1715CST			0	0		Thunderstorm Wind (G60)
A large tree was downed across Highway 54 from severe thunderstorm wind gusts.								
Camden County								
7 N Climax Spgs	26	1720CST			0	0		Thunderstorm Wind (G60)
Emergency management officials observed several downed trees over rural Camden County from severe thunderstorm wind gusts.								
Vernon County								
2 W Bronaugh	26	1730CST			0	0		Hail (0.75)
Benton County								
Whitakerville	26	1800CST			0	0		Hail (0.75)
Dallas County								
3 SE Tunas	26	1806CST			0	0		Thunderstorm Wind (G60)
Several large tree limbs were downed from severe thunderstorm wind gusts.								
Barton County								
5 E Lamar	26	1815CST			0	0		Hail (0.75)
Barton County								
Liberal	26	1815CST			0	0		Hail (0.75)

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
<u>MISSOURI, Southwest</u>							
Barton County							
Lamar	26	1820CST			0 0	0.50K	Thunderstorm Wind (G65)
Law enforcement officials observed downed power lines from severe thunderstorm wind gusts.							
Dade County							
Lockwood	26	1840CST			0 0	1K	Thunderstorm Wind (G65)
Amateur radio operators observed several trees and power lines downed from severe thunderstorm wind gusts.							
Polk County							
Brighton	26	1847CST			0 0		Thunderstorm Wind (G60)
Lawrence County							
Miller	26	1915CST			0 0		Thunderstorm Wind (G60)
Several large tree limbs were downed from severe thunderstorm wind gusts.							
Lawrence County							
Halltown	26	2000CST			0 0	0.50K	Thunderstorm Wind (G60)
Numerous trees and power lines were downed from thunderstorm wind gusts.							
Stone County							
2 NW Galena	26	2010CST			0 0		Hail (0.88)
Taney County							
Walnut Shade	26	2015CST			0 0		Hail (0.75)
<u>MONTANA, Central</u>							
Gallatin County							
11 N West Yellowstone	01	0000MST			0 0		Wildfire
12 N West Yellowstone	15	1200MST					
A lightning caused wildfire started north of West Yellowstone on the 20th of August. This wildfire was named the Rathbone Fire. 2000 acres burned by the end of August, and an additional 1000 acres burned in September. No structural losses or injuries were reported. Traffic was limited to the day time hours only on Highway 191 near the fire due to the thick smoke.							
Gallatin County							
6 N West Yellowstone	03	1517MST			0 0	3K	Dust Devil
7 N West Yellowstone		1518MST					
A dust devil went through the Rathbone Wildfire Base Camp on the 3rd. The dust devil was on the ground for 1 minute, it was 6 feet wide, and traveled one half mile. The dust devil struck a few camping tents and one equipment tent. A few personal items and a laptop computer were damaged. Some of this debris was blown in the air about 3000 feet.							
MTZ010-048							
Eastern Glacier - Southern Rocky Mountain Front							
	11	0700MST			0 0		High Wind (G49)
		1700MST					
A high wind event moved through the Rocky Mountain Front on the 11th. Sustained winds averaged between 40 and 45 mph, with gusts near 55 mph.							
MTZ047							
Blaine							
	13	1524MST			0 0		High Wind (G51)
A high wind gust of 59 mph occurred at Chinook 11S at 1524 MST.							
MTZ014							
Southern Lewis And Clark							
	25	1000MST			0 0		High Wind (G50)
		1100MST					
A high wind gust of 58 mph occurred at McDonald Pass at 1045 MST, with sustained winds near 50 mph from 1000 to 1100 MST.							
<u>MONTANA, East</u>							
NONE REPORTED.							
<u>MONTANA, South</u>							
NOT RECEIVED.							
<u>MONTANA, West</u>							
NONE REPORTED.							
<u>NEBRASKA, Central</u>							
Lincoln County							
1 N Maxwell	10	1940CST			0 0	18K	Thunderstorm Wind (G74)
		1950CST					
A severe thunderstorm moved through Eastern Lincoln County and produced damaging winds gusts up to 74 knots. A spotter reported damage to a house, uprooted and damaged trees and a collapsed garage with the occurrence of these winds, 1 mile North of Maxwell. Numerous power poles in the vicinity were also blown down							

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

NEBRASKA, East

Butler County									
2 NE Bellwood	09	1320CST			0	0			Hail (0.88)
Colfax County									
4 SE Richland	09	1330CST			0	0			Hail (0.75)
Cuming County									
4 NW West Pt	09	1527CST			0	0			Hail (0.75)
NEZ088									
Jefferson									
11		0800CST			0	0			Flood
12		1600CST							

Heavy rainfall fell across much of Jefferson county and adjacent counties to the west on September 10th and 11th. Radar estimates and rain gage measurements were in the 4 to 7 inch range for the 48 hour period. The heavy rain caused minor flooding in Jefferson county, especially along the Little Blue River. The Little Blue River surpassed it's 15 foot flood stage near Fairbury around 900 am on the 11th, and didn't drop below flood stage until around 500 pm on the 12th. The river crested at 17.6 feet during the afternoon hours on the 11th. However, no significant damage was reported since the river flooded mainly agricultural lowlands

NEZ078

Saline									
12		0800CST			0	0			Flood
15		0900CST							

Heavy rain fell across much of Saline county September 10th and 11th. Radar estimates and rain gage measurements were in the 4 to 7 inch range for the 48 hour period. The heavy rain caused minor flooding along Turkey Creek in Saline county. Turkey Creek near Wilber went above it's 11 foot flood stage during the morning hours on the 12th and didn't drop below flood stage until the afternoon of the 15th. The creek near Wilber crested at 14.6 feet during the afternoon of the 14th. The flooding affected mainly agricultural lowlands and no significant damage was reported.

NEBRASKA, Extreme Northeast

Dixon County									
6 NW Martinsburg	09	1813CST			0	0			Flash Flood
		2000CST							

Heavy rainfall of 3 to 5 inches caused a rapid overflow of a small creek

NEBRASKA, Extreme Southwest

NONE REPORTED.

NEBRASKA, South Central

Phelps County									
13 N Funk	09	1845CST			0	0	10K	100K	Hail (1.25)
Buffalo County									
6 W Ravenna	09	1955CST			0	0	0	0	Hail (0.75)
Sherman County									
3 SE Hazard	09	2005CST			0	0	0	0	Hail (0.75)
Franklin County									
4 SW Bloomington	10	1620CST			0	0	25K	250K	Hail (1.75)
Thayer County									
Davenport	10	1725CST			0	0	0	0	Hail (1.00)
Clay County									
Edgar	10	1752CST			0	0	0	0	Hail (0.88)
Fillmore County									
Shickley	10	1755CST			0	0	0	0	Hail (0.75)
Thayer County									
Carleton	10	1824CST			0	0	0	0	Thunderstorm Wind (G52)
Fillmore County									
Countywide	10	1930CST			0	0	250K	1M	Flash Flood
	11	0030CST							
Thayer County									
Countywide	10	1930CST			0	0	250K	1M	Flash Flood
	11	0030CST							
NEZ087									
Thayer									
11		0600CST			0	0	100K	500K	Flood
12		0000CST							

Severe thunderstorms with hail and torrential rainfall hammered a section of south-central Nebraska. Though there were some reports of large hail, flash flooding and river flooding caused the most disruption. U. S. Highway 81 in Fillmore county was closed for a time due to water over the road. There were numerous reports of flooding and water over the roads in Fillmore and Thayer counties. Rainfall of 3 to 8 inches was reported to have fallen. The Big Sandy Creek in Thayer county was out of its banks from Carleton downstream to Alexandria. The Big Sandy crested around 15 feet south of Alexandria which resulted in minor flooding in

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
<u>NEBRASKA, South Central</u>									
eastern Thayer county.									
<u>NEBRASKA, West</u>									
Scotts Bluff County									
2 NW Scottsbluff	09	1643MST 1647MST			0	0			Hail (1.00)
Scotts Bluff County									
8 NNE Scottsbluff	09	1705MST 1709MST			0	0			Hail (0.75)
<u>NEVADA, North</u>									
NONE REPORTED.									
<u>NEVADA, South</u>									
NVZ019		Spring Mountains							
02		0622PST 0915PST			0	0			Flood
Runoff from a thunderstorm east of Pahrump caused Highway 160 to become submerged under 3 feet of water. Several drivers had to be rescued after attempting to drive through the water.									
<u>NEVADA, West</u>									
Lyon County									
Dayton	04	1530PST 1559PST			0	0			Flash Flood
Spotter reported 4-6 inches of water running over U.S. Highway 50 due to heavy thunderstorm rains.									
<u>NEW HAMPSHIRE, North and Central</u>									
Grafton County									
Bristol	04	0230EST			0	0	25K		Lightning
Lightning struck a 230 yr-old maple tree that was located very near a home in Bristol. The lighting shattered windows and followed an underground cable into the home. The lightning caused extensive damage to the home's electrical system and caused a small fire. Electronic equipment in the home was also damaged.									
<u>NEW HAMPSHIRE, Southern</u>									
NONE REPORTED.									
<u>NEW JERSEY, Northeast</u>									
NOT RECEIVED.									
<u>NEW JERSEY, South and Northwest</u>									
NJZ014-024>026		Eastern Monmouth - Eastern Cape May - Eastern Atlantic - Eastern Ocean							
	18	0600EST			1	0			Heavy Surf/High Surf
	20	1800EST							
		M51IW							
NJZ014-016>019-021-023>027		Eastern Monmouth - Salem - Gloucester - Camden - Northwestern Burlington - Cumberland - Western Cape May - Eastern Cape May - Eastern Atlantic - Eastern Ocean - Southeastern Burlington							
	18	1300EST			0	0			Storm Surge
	19	1700EST							
NJZ001-007>010-012>013-015>020-022-027		Sussex - Warren - Morris - Hunterdon - Somerset - Middlesex - Western Monmouth - Mercer - Salem - Gloucester - Camden - Northwestern Burlington - Western Ocean - Western Atlantic - Southeastern Burlington							
	18	1600EST			1	0			High Wind (G50)
	19	0500EST							
		F?VE							
NJZ014-021-023>026		Eastern Monmouth - Cumberland - Western Cape May - Eastern Cape May - Eastern Atlantic - Eastern Ocean							
	18	1600EST			0	0			Tropical Storm
	19	0500EST							
Tropical Storm Isabel produced strong power outage producing winds, moderate tidal flooding along the Delaware Bay and the Delaware River and erosion and rough surf along the shore. Two deaths were directly attributed to the storm. In Warren County, a woman died when a tree landed and crushed the vehicle she was riding. In Cape May County, a 51-year-old man drowned in the rough surf off of Wildwood Crest. Isabel made landfall as a hurricane near Drum Inlet, North Carolina around 100 p.m. EDT on the 18th and weakened as it tracked farther inland. At one time in its life cycle, it was a powerful Category 5 hurricane when it was north of the Leewood Islands. Winds gusted up to 62 mph in New Jersey and downed countless numbers of trees, tree limbs and power lines. It was one of the worst power outages on record for area utilities. While tide heights along the oceanside only reached minor,									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

NEW JERSEY, South and Northwest

wave action caused considerable beach erosion, especially in Cape May and Atlantic Counties. The tidal departures increased as southeast winds funneled the winds up Delaware Bay and River. At Reedy Point (Delaware), the tide reached 8.66 feet above mean lower low water. The storm surge was 5 feet. In Burlington, the tide reached 10.64 feet. The storm surge was 6.49 feet. The rain was not heavy as most places had less than an inch and half of rain. The heaviest rain with tropical systems often falls west of its storm track, thus the region was spared from the heavier rain.

Peak wind gusts included 63 mph in Cape May City, 62 mph in Strathmere (Cape May County), 61 mph at the Cape May Coast Guard, 55 mph in Millville (Cumberland County), 53 mph at the Atlantic City Marina, 52 mph in Keansburg (Monmouth County) and 47 mph in Sparta (Sussex County). A peak wind gust of 70 mph was also recorded at Ship John Shoal Light in Delaware Bay.

Gloucester County National Park

23 0625EST 0 0 Thunderstorm Wind (G61)

A potent line of severe thunderstorms uprooted whole trees in National Park Borough. Houses were damaged by the fallen trees.

Hunterdon County Sergeantsville to Sand Brook

23 0650EST 2 50 0 0 Tornado (F1)
0654EST

An F1 tornado touched down in Hunterdon County in Delaware Township. It touched down just south of County Route 523 in Sergeantville and moved northeast and lifted near County Route 579 east of Sand Brook. One house suffered significant damage. Several houses suffered minor damage. Two barns blew off their foundation. Numerous trees were snapped or uprooted.

Camden County Cherry Hill

23 0655EST 0 0 Thunderstorm Wind (G52)

A powerful line of severe thunderstorms uprooted trees and downed wires along New Jersey State Route 38 in Cherry Hill Township.

Burlington County Countywide

23 0702EST 0 0 1.5M Thunderstorm Wind (G61)
0825EST

A powerful line of severe thunderstorms uprooted numerous trees and power lines throughout Burlington County. The combination of the Florence Tornado and the line of severe storms produced an estimated property damage of \$2.1 million dollars throughout the county. Most of the wind damage was caused by trees falling on homes and vehicles. Beside Florence, other hard hit areas included Cinnaminson, Edgewater Park and Willingboro Townships.

Burlington County Florence to Roebing

23 0714EST 1.8 120 0 0 600K Tornado (F1)
0718EST

An F1 tornado touched down in Florence Township and uprooted about 100 trees along its path. Some of the trees fell on and damaged homes. Wind damage in the county due to the tornado and the line of severe thunderstorms was estimated at \$2.1 million dollars. The maximum wind speeds were estimated at 85 mph. The tornado remained on the ground for about 1.75 miles and lifted in the Roebing Section of the township.

Mercer County Trenton to Slackwood

23 0715EST 3 100 0 0 Tornado (F1)
0721EST

An F1 tornado touched down in the eastern part of Trenton around Hillcrest and traveled northeast passing through the southern part of Ewing Township and into southwestern part of Lawrence Township before it lifted around the Slackwood area. The worst wind damage and the strongest part of the tornado occurred just west of the Lawrence/Ewing Township border. A car dealership lost its roof. Numerous trees and power lines were blown down and several telephone poles were snapped. The tornado remained on the ground for about three miles and its path width was about 100 yards.

Mercer County Countywide

23 0715EST 0 0 Thunderstorm Wind (G59)
0745EST

A powerful line of severe thunderstorms uprooted numerous trees and wires throughout Mercer County. A SKYWARN Spotter reported a measured wind gust to 68 mph in Ewing. This was not in the path of the tornado.

Middlesex County Countywide

23 0732EST 0 0 Thunderstorm Wind (G65)
0750EST

A powerful line of severe thunderstorms produced a measured wind gust to 75 mph at the GFDL Laboratory in Plainsboro Township. The line of storms tore down whole trees in East and North Brunswick Townships.

Atlantic County Elwood

23 0757EST 0 0 Thunderstorm Wind (G52)

A powerful line of severe thunderstorms uprooted trees and knocked down wires in Hammonton and Mullica Townships.

NEW MEXICO, Central and North

NOT RECEIVED.

NEW MEXICO, South Central and Southwest

Dona Ana County 4 SE Las Cruces

09 1440MST 0 0 Thunderstorm Wind (G50)

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

NEW MEXICO, Southeast

Lea County

Hobbs **09** **2028MST** **0** **0** **0** **0** **Hail (0.75)**
Scattered thunderstorms moved across the plains of southeast New Mexico during the evening of the 9th. An isolated storm became severe and resulted in large hail in the Hobbs vicinity.

NEW YORK, Central

NYZ057

Delaware

02 **0930EST** **0** **0** **Flood**
1200EST

The Beaver Kill at Cooks Falls exceeded flood stage briefly cresting at 10.14 feet. Flood stage is 10 feet. This was due to a low pressure system which moved through central Pennsylvania. 2 to 4 inches of rain fell causing the rapid rise in river level.

Sullivan County **North Portion**

04 **0100EST** **0** **0** **500K** **Flash Flood**
0400EST

1 to 3 inches of heavy rain fell in less than 6 hours. Before this rain the ground was already saturated from several inches of rain that fell on September 2nd. The towns of Delaware and Callicoon were hard hit with several roads undermined or with shoulders eroded. Many roads across northern Sullivan County had to be closed during the flooding. Most were opened after daybreak. Stewart Road in the town of Callicoon was washed out. The water created a 10 foot hole in the road.

NYZ057

Delaware

04 **0330EST** **0** **0** **Flood**
1045EST

A slow moving cold front brought more rain to the Beaver Kill basin. This caused the Beaver Kill at Cooks Falls to rise rapidly to a crest of 11.34 feet. Flood stage is 10 feet. The river had not fully recovered from the minor flooding of September 2nd. Most of the 1 to 2 inches of rain become runoff due to the still moist ground.

NYZ057

Delaware

04 **0630EST** **0** **0** **Flood**
1244EST

A slow moving cold front crossed the area dropping 1 to 2 inches of rain. This rain fell on grounds already saturated from 2 to 4 inches of rain that fell on September 1st to 2nd. With all of the rain, the East Branch of the Delaware River at Fishs Eddy crested at 15.70 feet. Flood stage is 15 feet. This flooding was enhanced by flooding upstream on the Beaver Kill and spilling of water at Pepacton Reservoir.

NYZ009-015>018- 022>025-036>037- 044>046-055>057-062

**Northern Oneida - Yates - Seneca - Southern Cayuga - Onondaga - Steuben - Schuyler - Chemung - Tompkins
- Madison - Southern Oneida - Cortland - Chenango - Otsego - Tioga - Broome - Delaware - Sullivan**

19 **0500EST** **0** **0** **850K** **High Wind (G50)**
1800EST

Remnants of hurricane Isabel moved up through western Pennsylvania and western New York on the 19th. It brought with it high winds. Most locations had gusts to between 40 and 50 mph, but higher elevations may have had higher gusts. Scattered reports of trees and wires down were common. Tens of thousands of electric customers were without power. A few trees and wires fell on cars and houses, and closed roads.

Yates County **Penn Yan**

22 **1900EST** **0** **0** **30K** **Thunderstorm Wind (G50)**

Thunderstorm winds blew over a popup camper and several trees in the village of Penn Yan. The camper was turned upside down.

Oneida County **Rome**

27 **2000EST** **0** **0** **10K** **Lightning**

Lightning struck the tower of the St Mary's of the Assumption church on West Liberty Street. This damaged the electric bell system in the tower.

NEW YORK, Coastal

NOT RECEIVED.

NEW YORK, East

NYZ038-047

Southern Herkimer - Schoharie

19 **1426EST** **0** **0** **10K** **High Wind (G60)**
1430EST

The remnants of Hurricane Isabel moved from the mid Atlantic States, northeast to western New York, during the afternoon of September 19. While eastern New York was spared the widespread damage experienced further south and west, winds from the storm did manage to blow some trees down in Schoharie and southern Herkimer Counties. A tree fell on a car on Elm Street in Cobleskill damaging it. The winds also knocked out power to about 3,000 customers in the Schoharie and eastern Mohawk Valleys.

Dutchess County **Billings**

23 **0848EST** **0** **0** **5K** **Thunderstorm Wind (G60)**

Ulster County **New Paltz**

23 **0900EST** **0** **0** **18K** **Flash Flood**
1200EST

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops	Character of Storm	
<u>NEW YORK, East</u>									
Dutchess County									
La Grange	23	0905EST			0	0		Funnel Cloud	
A strong cold front produced a line of showers and thunderstorms across eastern New York on the morning of September 23. One of the cells became severe as it moved into Dutchess County. Strong winds from the storm knocked trees and powerlines down at the intersection of Route 55 and Route 82 in the town of Billings. A funnel cloud was reported by a Law Enforcement Officer in the town of La Grange. Heavy rains resulted in flash flooding in the town of New Paltz in Ulster County. Route 32 flooded in that town submerging a taxi at the intersection of Route 32 and Sunset Ridge Road. The driver was not injured. By 4 pm, city firefighters in New Paltz had assisted in pumping 18 flooded basements out. The storms resulted in scattered power outages.									
Dutchess County									
Fishkill	28	0100EST 0102EST	1.2	75	0	0	10K	Tornado (F1)	
A cold front spawned a line of heavy showers across eastern New York during the early morning hours of September 28. A cell broke loose from the line and became a super cell that spawned a tornado of F0-f! intensity across Fishkill, Dutchess County. The length was a little over a mile and the width varied greatly between 25 and 100 yards. Most of the damage was to trees, but some wires were blown down and a transformer blew up. Flying debris shattered a window in a home. No injuries were reported with this tornado.									
<u>NEW YORK, North</u>									
NYZ035									
	19	Eastern Essex 1239EST 2000EST			0	0	10K	High Wind (G40)	
The remnants of Hurricane Isabel moved across western New York the afternoon of Friday, September 19th and into Canada by evening.Strong winds accompanied this system and were enhanced by the proximity of a strong high pressure system over the Canadian Maritimes. A few trees and power lines were blown down in Moriah, Westport and Lewis.									
NYZ028									
	19	Eastern Clinton 1410EST 2000EST			0	0	10K	High Wind (G40)	
The remnants of Hurricane Isabel moved across western New York the afternoon of Friday, September 19th and into Canada by evening.Strong winds accompanied this system and were enhanced by the proximity of a strong high pressure system over the Canadian Maritimes. A few trees and power lines were blown down, especially in and around Chazy.									
Franklin County									
Saranac Lake	27	2200EST			0	1	5K	Lightning	
Lightning struck a house damaging an antenna and computer. The computer operator was injured but survived.									
<u>NEW YORK, West</u>									
NONE REPORTED.									
<u>NORTH CAROLINA, Central</u>									
NCZ007>011-025>028-041-043-078-088	Person - Granville - Vance - Warren - Halifax - Durham - Franklin - Nash - Edgecombe - Wake - Wilson - Wayne - Cumberland								
	18	0900EST 2100EST			1	0	7.3M	Hurricane/Typhoon	
Hurricane Isabel made landfall along the Outer Banks just north of Cape Lookout around 1 pm on September 18, 2003. The eye of the storm tracked northeast passing over eastern Halifax County. Winds gusts to near Hurricane force were recorded over Halifax county. Many locations across the Coastal Plain and even back into the Triangle received wind gusts between 50 to 70 mph late in the afternoon until early evening. Many trees were uprooted falling on vehicles and homes all across the area. One person was killed in Franklin county when their vehicle struck a downed tree. Up to 6 inches of rain fell across Edgecombe, Halifax and Wilson counties resulting in flooding of several roads. M45VE									
Halifax County									
Roanoke Rapids	18	1438EST 1800EST			0	0		Flash Flood	
Flooded roads were impassable in Roanoke Rapids.									
Edgecombe County									
Tarboro	18	1600EST 1800EST			0	0		Flash Flood	
Town Creek flooded over highway 111 near Tarboro.									
Warren County									
Countywide	18	1800EST 2000EST			0	0		Flash Flood	
Low lying areas around the county were flooded along with some roads.									
Davidson County									
Lexington	23	0000EST			0	0		Thunderstorm Wind (G65)	
Large trees were uprooted and snapped from I-85 Exit 102 northeast across Veteran's Park. A few homes were damaged from the falling trees. Minor shingle damage occurred to a day care center, a machine shop, and a church.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

NORTH CAROLINA, Central

Davidson County

North Central Portion **23** **0000EST** **0** **0** **650K** **Flash Flood**
0200EST

Several creeks produced moderate to major flooding including Hamby Creek, Rich Fork Creek, and Abbotts Creek. Several roads and bridges were washed out, and 34 roads were under water. 21 homes, 4 apartments, one school, and one fire station were flooded. Areas around Lexington and Thomasville sustained the worst flooding

Forsyth County

Kernersville **23** **0130EST** **0** **0** **Flash Flood**
0300EST

Some homes were flooded.

Guilford County

Greensboro **23** **0200EST** **0** **0** **Flash Flood**
0330EST

Buffalo Creek flooded, damaging at least 40 apartments near Four Seasons Mall. Many homes around Latham Park were flooded. As much as 3 feet of water inundated some homes.

NORTH CAROLINA, Central Coastal

Dare County

(Hat)Cape Hatteras **04** **1700EST** **1** **0** **Rip Current**

Dare County Emergency Management reported a rip current drowning of a Maryland man near Cape Hatteras. Swells generated from Hurricane Fabian, which was 875 miles southeast of the Outer Banks, caused heavy surf and rip currents across the entire Eastern North Carolina coastline.

M38IW

**NCZ029-044>047-
079>081-090>095-
098-103>104**

**Martin - Pitt - Washington - Tyrrell - Western Dare - Greene - Beaufort - Western Hyde - Duplin - Lenoir -
Jones - Craven - Pamlico - Carteret - Onslow - Eastern Dare - Eastern Hyde**

17 **1800EST** **0** **0** **435.6M** **14.3M** **Hurricane/Typhoon**
19 **2300EST**

Hurricane Isabel made landfall early in the afternoon on September 18th as a category two hurricane across Core Banks in extreme eastern Carteret county. Isabel moved north northwest near 20 mph across eastern North Carolina during the afternoon. Areas mainly near and east of the storm center experienced significant wind and storm surge effects. Major ocean overwash and beach erosion occurred along the North Carolina Outer Banks where waves up to 20 feet accompanied a 6 to 8 foot storm surge. Almost 350 million dollars in damage occurred in Dare county alone where several thousand homes and businesses, several piers, and sections of Highway 12 were damaged or washed away. Eastern Carteret, eastern Pamlico, southern Craven, Beaufort, and Hyde counties experienced significant storm surge damage with hundreds of homes flooded in most of these counties. The highest storm surges were experienced in the lower reaches of the Neuse River where water levels rose to as high as 10.5 feet at the mouth of Adams Creek. Storm surge values ranged from 6 to 10 feet across eastern Pamlico county with the highest water levels recorded near Oriental. A 4 to 7 foot storm surge occurred across Core Sound in eastern Carteret county, except water levels rose between 8 and 10 feet along the South River and Big Creek. Storm surge values were around 7 feet in portions of Beaufort county in Washington, and Belhaven. Virtually every business on Main Street in Belhaven was flooded with 2 to 3 feet of water. Storm surges from 2 to 6 feet occurred across Hyde county with the highest water levels recorded in Swan Quarter in the southwest part of the county where hundreds of homes and businesses flooded. Wind damage was more significant across Hyde, Washington, Tyrell, Martin, and the Outer Banks counties where wind gusts of around 100 mph occurred. Hurricane force winds resulted in structural damage to homes. Numerous trees and power lines were downed across these areas resulting in a loss of electricity for several weeks in some locations. Hurricane force winds were also experienced in parts of the inland counties of Jones, Craven, and Pitt counties during the afternoon of September 18th where inland hurricane wind warnings had been in effect for 11 hours. Other counties west of the center of the storm experienced wind gusts between 60 and 65 mph.

Carteret County

Newport **18** **1300EST** **0** **0** **Flash Flood**
1500EST

The Time Warner Cable office was flooded with several feet of water in the parking lot.

Craven County

Havelock **18** **1315EST** **0** **0** **Flash Flood**
1530EST

The Pine Villa Apartments were flooded with several feet of water in the parking lot.

NORTH CAROLINA, Extreme Southwest

NONE REPORTED.

NORTH CAROLINA, North Coastal

NOT RECEIVED.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

NORTH CAROLINA, Northwest and North Central

Stokes County

1.5 NW King

04

0400EST
0600EST

0

0

Flash Flood

Thunderstorms with very heavy rain during the early morning of the 4th, caused Danbury Creek to flood Goff Road, 1.5 miles northwest of King.

Rockingham County

Eden

04

1245EST

0

0

15K

Thunderstorm Wind (G70)

Rockingham County

Reidsville

04

1330EST
1530EST

0

0

Flash Flood

Thunderstorms during the afternoon of the 4th produced flash flooding and damaging winds.

Heavy thunderstorm rains during the afternoon of the 4th caused Wolf Island Creek to flood in Reidsville.

Thunderstorm winds in Eden blew the doors off the Eden Mall then blew out 17 skylights. One of the skylights broke out the window of a truck in the parking lot.

NCZ004>006

Stokes - Rockingham - Caswell

18

1330EST
2130EST

0

0

300K

Tropical Storm

As Hurricane Isabel weakened to a tropical storm, winds were sustained during the mid afternoon and early evening at up to 45 to 55 mph with gusts near 65 mph. This produced widespread wind damage with numerous trees and power lines downed.

NORTH CAROLINA, South Coastal

NCZ097-100>101

Pender - Brunswick - New Hanover

18

0800EST
1800EST

0

0

Tropical Storm

The eye of category 3 Hurricane Isabel made landfall between Cape Lookout and Cape Hatteras NC during the afternoon. The fringe of Isabel's circulation caused offshore winds gusting near 60 mph along the beaches of Pender, New Hanover and Brunswick Counties. Damage was minimal, mainly to scattered tree limbs and some roof shingles. Beach erosion damaged a roadway on Bald Head Island, Brunswick County.

Pender County

Hampstead

22

1830EST
1835EST

0

0

Thunderstorm Wind (G70)

Strong winds blew eight trees down on Lee Drive, Factory Road, and Second Street.

NORTH CAROLINA, Southwest

Jackson County

9 SSE Cashiers

01

0300EST
0500EST

0

0

Flash Flood

Thunderstorms produced about 8 inches of rain across the area from the evening of the 31st through the early morning hours of the 1st. This resulted in flash flooding along some creeks and small streams in the extreme southern part of the county. A landslide closed portions of highway 281.

Henderson County

Countywide

22

1600EST
1800EST

0

0

Heavy Rain

Jackson County

Countywide

22

1600EST
1800EST

0

0

Heavy Rain

Transylvania County

Countywide

22

1600EST
1800EST

0

0

Heavy Rain

A large storm system produced very heavy rainfall across the southern mountains of North Carolina during the early evening, which resulted in some urban and small stream flooding across the area. More significant flooding developed in Transylvania County after 7 pm.

Transylvania County

Countywide

22

1800EST
2300EST

0

0

20K

Flash Flood

Flooding began around Rosman in urban and poor drainage areas, after which flooding developed quickly along creeks. The French Broad River rose above flood stage at Rosman just after 7 pm, and remained in flood through 11 pm. At the height of the flooding, some vehicles were half-submerged in flood waters. Numerous mud slides also developed. Flooding developed late in the evening across other portions of the county, including along the Davidson River in Pisgah National Forest.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

NORTH CAROLINA, Southwest

Rowan County

China Grove to
Spencer

22 2200EST
23 0100EST

0

0

5K

Flash Flood

Heavy rainfall resulted in flash flooding along Grant's Creek between Salisbury and Spencer. A creek near China Grove overflowed its banks and flooded a portion of highway 152. Town Creek flooded in Salisbury, causing some damage at a construction site, and resulting in several road closures.

NORTH DAKOTA, Central and West

NONE REPORTED.

NORTH DAKOTA, East

Barnes County

Valley City

16 2305CST

0

0

Hail (0.75)

Richland County

2 W Galchutt

17 1040CST

0

0

Hail (0.88)

Grand Forks County

Grand Forks

17 1530CST

0

1

Lightning

A woman leaving work was struck by lightning as she walked to her car. She suffered no visible injuries, but was taken to the emergency room for observation. She later reported seizure-like muscle twitches

OHIO, East

Jefferson County

Bergholz

01 2243EST
2355EST

0

0

10K

Flash Flood

North Fork Creek overflowed and flooded State Route 524. Three people had to abandon their car and swim to safety. No injuries

Carroll County

Wattsville

01 2244EST
2355EST

0

0

Flash Flood

State Route 524 flooded.

Harrison County

Bowerston to
Scio

03 1630EST
1800EST

0

0

Flash Flood

State Route 151 flooded at several locations between Scio, Conotton, and Bowerston.

OHIO, North

Stark County

East Sparta

26 2045EST

0

0

5K

Thunderstorm Wind (G50)

Thunderstorm winds downed several large tree limbs.

Stark County

Canton

26 2122EST

0

0

Hail (0.75)

Dime size hail was observed.

Mahoning County

North Lima

26 2125EST

0

0

5K

Thunderstorm Wind (G50)

Thunderstorm winds downed a few large tree limbs.

Summit County

Greensburg

26 2125EST

0

0

Hail (0.75)

Penny size hail was observed.

Portage County

Suffield

26 2135EST

0

0

3K

Thunderstorm Wind (G50)

Thunderstorm winds downed a couple of large tree limbs.

Hancock County

Countywide

26 2220EST

0

0

15K

Thunderstorm Wind (G50)

Thunderstorm winds downed a few trees across the county.

Wood County

West Millgrove

26 2230EST

0

0

25K

Thunderstorm Wind (G50)

Thunderstorms downed several trees southeast of West Millgrove and just to the northwest of Fostoria. A couple of homes sustained some roof damage.

Wood County

Bloomdale

26 2233EST
27 2233EST

0

0

3K

Thunderstorm Wind (G50)

Thunderstorm winds downed two trees.

Erie County

Sandusky

26 2300EST

0

0

Hail (0.75)

Penny size hail was observed.

Storm Data and Unusual Weather Phenomena

September 2003

								September 2003	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<u>OHIO, North</u>									
Erie County									
Vermilion	26	2320EST			0	0	5K		Thunderstorm Wind (G50)
	27	2320EST							
	Thunderstorm winds downed a few large tree limbs.								
Marion County									
La Rue	26	2320EST			0	0	15K		Thunderstorm Wind (G50)
	Thunderstorm winds downed three power poles near La Rue.								
Lorain County									
Amherst	27	0005EST			0	0	2K		Thunderstorm Wind (G50)
	Thunderstorm winds downed two large tree limbs.								
Crawford County									
Bucyrus	27	0015EST			0	0	15K		Thunderstorm Wind (G50)
	Thunderstorm winds downed several trees in the Bucyrus area.								
Richland County									
Mansfield	27	0015EST			0	0	3K		Thunderstorm Wind (G50)
	Thunderstorm winds downed a few large tree limbs.								
Morrow County									
Mt Gilead	27	0030EST			0	0	2K		Thunderstorm Wind (G50)
	Thunderstorm winds downed two large tree limbs north of Mount Gilead.								
Cuyahoga County									
Shaker Hgts	27	0040EST			0	0	8K		Thunderstorm Wind (G50)
	Thunderstorm winds downed several large tree limbs.								
Portage County									
Hiram	27	0100EST			0	0	3K		Thunderstorm Wind (G50)
	Thunderstorm winds downed a couple of large tree limbs.								
Wayne County									
Creston	27	0100EST			0	0			Hail (0.75)
	Penny size hail was observed.								
Geauga County									
Chardon	27	0130EST			0	0	6K		Thunderstorm Wind (G50)
	Thunderstorm winds downed three trees.								
Ashtabula County									
Geneva	27	0155EST			0	0	4K		Thunderstorm Wind (G50)
	Thunderstorm winds downed two large trees.								
Trumbull County									
North Bloomfield	27	0210EST			0	0	3K		Thunderstorm Wind (G50)
	Thunderstorm winds downed a couple of large tree limbs.								
Knox County									
Mt Vernon	27	0215EST			0	0	2K		Thunderstorm Wind (G50)
	Thunderstorm winds downed one tree and one large limb.								

OHIO, Northwest

NONE REPORTED.

OHIO, Southeast

OHZ086

Gallia

**02 0200EST
1300EST**

0 0 20K Flood

South a strong frontal zone, rains of 2 to 4 inches fell in a 24 hour period from midday on the 1st through midday on the 2nd. The heaviest rain amounts ran west to east, across Gallia County, from near the community of Gallia to the Ohio River around Gallipolis. The cooperative observer at Gallipolis measured 3.8 inches of rain. At the end of the event, small streams overflowed and blocked several county roads.

OHIO, Southwest

**OHZ034>035-042-
042-042-046-051-051-
055-062-077**

Mercer - Auglaize - Darke - Delaware - Miami - Franklin - Greene - Hamilton

**01 1349EST
2000EST Flood**

Heavy rain fell across much of west central and central Ohio throughout the afternoon and evening. Most areas along and north of Interstate 70 received one inch, with some locations northwest of Dayton seeing two to three inches of rain. The heavy rains resulted in flooding of numerous roads, several creeks rose out of their banks, and basements were flooded in Miami, Darke and Franklin counties. Up to fifteen homes were flooded and had minor damage in Darke County.

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
OHIO, Southwest									
Miami County Brandt	01	1430EST 1434EST			0	0	3K		Thunderstorm Wind (G50)
Numerous trees were downed.									
Darke County 1 S Versailles	01	1440EST 1444EST			0	0	3K		Thunderstorm Wind (G50)
Trees were downed along Jamison Road.									
Miami County Piqua	01	1445EST 1449EST			0	0	8K		Thunderstorm Wind (G50)
Several trees downed on homes along Washington Road, causing minor damage.									
Delaware County Delaware	01	1600EST 1604EST			0	0	3K		Thunderstorm Wind (G50)
A few trees and a power pole were downed.									
OHZ062-070>071-071>072	02	1430EST 2000EST			0	0	10K		Flood
Persistent heavy rain produced an additional one to two inches across southwest Ohio during the afternoon. The heavy rain caused flooding of roads and several creeks rose out of their banks. A school bus was stranded in high water near Mason. Kings Mills Road in Mason collapsed in a construction area when the heavy rains washed out a culvert. Twenty-five people were evacuated from the Royal Oaks Apartments in Fairfield due to high water.									
OHZ063	Fayette 03	0930EST 1100EST			0	0			Flood
Heavy rain produced one to two inches in the Washington Court House area during the morning. Several roads were flooded, with one car stranded in three feet of water.									
Miami County Countywide	26	1930EST 1945EST			0	0	5K		Thunderstorm Wind (G50)
Trees were downed.									
Darke County 1 NW New Weston	26	2200EST 2205EST	0.8	50	0	0	100K		Tornado (F1)
A brief tornado touched down across the extreme northern part of the county. One barn was destroyed, and another barn had its roof blown off. Two nearby silos sustained some damage. In total, nine farm buildings sustained damage from the tornado. Two nearby houses had minor structural damage. Winds were estimated to be near 80 mph.									
Shelby County Port Jefferson to Maplewood	26	2235EST 2245EST			0	0	150K		Thunderstorm Wind (G90)
A strong microburst caused damage to homes across the eastern part of the county. One house was blown off of its foundation, and several others sustained major damage. Numerous trees were downed across the area. Maximum wind speeds were estimated between 100 and 120 mph.									
Logan County Lakeview to Lewistown	26	2250EST 2300EST			0	0	50K		Thunderstorm Wind (G70)
Several silos on a farm were heavily damaged by the strong winds. An airplane was overturned at a nearby airfield. Fences were blown over and damaged at Indian Lake High School. Numerous trees were downed, including one that fell on a house, causing minor damage. A mobile home was also destroyed.									
Warren County Mason to South Lebanon	27	0040EST 0050EST			0	0	4M		Thunderstorm Wind (G78)
An intense microburst caused extensive damage to homes and businesses across the southern part of the county. Several buildings sustained major damage along Mason-Montgomery Road. Up to fifty windows were blown out at Kings Junior High School. Portions of the roof were damaged and a wall was blown in at the junior high school as well. Numerous buses near the junior high school were severely damaged by flying debris and a nearby shed was destroyed. The fifty foot marquee at Kings Island Amusement Park was blown down and completely destroyed. 36 homes suffered roof damage in Kings Mills. In South Lebanon, a small church and 75 homes sustained damage, including five that were severely damaged. Fifteen vehicles were struck by fallen trees. Trees and power poles were downed in a widespread area. Maximum wind speeds were estimated between 80 and 100 mph.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

OHIO, Southwest

OHZ046-055

Delaware - Franklin

27 0200EST

0

0

Flood

0245EST

Heavy rain caused minor flooding of roads across northern portions of the Columbus metro area north into Delaware County.

OKLAHOMA, Eastern

Nowata County

1 NE Wann

26

1820CST

0

0

5K

Thunderstorm Wind (G61)

Thunderstorm winds estimated at 70 miles an hour blew down trees and power poles.

Craig County

11 SE Vinita

26

1930CST

0

0

Thunderstorm Wind (G61)

Thunderstorm winds estimated at 70 miles an hour blew trees down two miles west of Ketchum.

OKLAHOMA, Extreme Southeast

NONE REPORTED.

OKLAHOMA, Panhandle

Texas County

Eva

09

1729CST

0

0

Hail (1.00)

Texas County

6 N Texhoma

09

1730CST

0

0

Hail (0.75)

Texas County

2 S Eva

09

1740CST

0

0

Hail (1.00)

Severe thunderstorms moved across the central Oklahoma panhandle during the early evening hours producing large hail.

Texas County

3 NW Tyrone

20

1726CST

0

0

Hail (1.50)

Texas County

11 E Guymon

20

1830CST

0

0

Hail (1.00)

Beaver County

5 S Turpin

20

1848CST

0

0

Hail (0.88)

Beaver County

Balko

20

1903CST

0

0

Hail (1.00)

Beaver County

Balko

20

1945CST

0

0

Hail (1.00)

Severe thunderstorms producing large hail moved across the central and eastern sections of the Oklahoma panhandle during the early evening hours.

OKLAHOMA, Western, Central and Southeast

Beckham County

Erick

10

1930CST

0

0

Thunderstorm Wind (G52)

Beckham County

4 ESE Erick

10

2235CST

0

0

Thunderstorm Wind (G50)

Wind was measured by the Oklahoma mesonet.

Beckham County

3 W Carter

10

2325CST

0

0

Hail (1.50)

Beckham County

3 W Carter

10

2325CST

0

0

Thunderstorm Wind (G52)

Harmon County

4 N Madge

10

2354CST

0

0

5K

Thunderstorm Wind (G56)

A barn was damaged. Four inch tree limbs were also downed.

Beckham County

Erick

11

0000CST

0

0

50K

Flash Flood

0630CST

Four to nine inches of rain fell in Beckham county causing many flooding problems. Water went into some businesses in Erick. The baseball field was flooded and fences at the field were downed by moving water. Standing water was at least four feet deep in some areas. An elderly man had to be evacuated from his vehicle which was stalled due to high water.

Beckham County

1 N Erick

11

0000CST

0

0

Flash Flood

0600CST

Four semi tractor trailer vehicles hydroplaned into the Interstate 40 median. Two trucks went off the road at 0100 CDT with the other two trucks going into the median at approximately 0450 CDT. Wrecker trucks had difficulty getting to the vehicles due to water running across Interstate 40.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OKLAHOMA, Western, Central and Southeast

Jackson County

5 NW Duke

11 0025CST 0 0 1K Thunderstorm Wind (G52)

Several tree limbs up to eight inches in diameter were downed.

OKZ021-033>034

Beckham - Harmon - Greer

11 0200CST 0 0 Flood

12 0500CST

The river most affected by the heavy rains was the Elm Fork of the North Fork Red River in Greer, Harmon, and Beckham counties. Moderate flood levels were reached at two river gage sites. At the USGS river gage site near Vinson in Harmon County, a crest of 13.45 feet occurred on the Elm Fork during the early morning hours of September 11, which was 4.45 feet above flood stage. The moderate flooding conditions eventually moved downstream past the river gage site 3 miles north of Mangum on the U.S. Highway 283 Bridge. At this location, the Elm Fork crested during the early morning hours of September 12 at a stage of 24.15 feet, which was 3.15 feet above flood stage.

The floodwaters inundated low-lying fields and some roads along the river, and a blacktop road was closed by high water 4 miles north of Reed in the Jaybuckle area. One residence in the Jaybuckle area was threatened briefly during the late morning of September 11, as floodwaters crept within inches of the house. Residents in the area reported that Elm Fork had reached its highest levels since the catastrophic floods of June 1995.

Beckham County

Sayre

11 0330CST 0 0 Flash Flood

0600CST

Sayre City Park was flooded.

McClain County

Blanchard

11 0400CST 0 0 Flash Flood

0600CST

Heavy rainfall totals of 3 to 5 inches during the early morning of September 11 generated flash flooding in the Blanchard area. A waterway that runs through part of town overflowed flooding yards and nearly entering some nearby homes. Water was seen reaching the top of the foundations of two homes. The flood waters left behind trash and other flood debris.

Precipitation totals of 5 to 9+ inches fell during the late evening hours of September 10 and early morning hours of September 11 over parts of west central and southwestern Oklahoma and the eastern Texas Panhandle. The subsequent heavy runoff from these torrential rains initially produced flash flooding in this area, especially in and near the city of Erick, where the cooperative observer reported a storm total of 8.61 inches, and an unofficial total of 9.45 inches was measured.

The runoff from these heavy rains eventually moved from small creeks and tributaries into the three main rivers in the region, and produced either flooding or bankfull conditions along these rivers. The river most affected was the Elm Fork of the North Fork Red River in Greer, Harmon, and Beckham counties. Moderate flood levels were reached at two river gage sites.

Heavy rainfall amounts of 4 to 5+ inches near Sayre also produced minor flooding along the North Fork of the Red River, as floodwaters overflowed its banks on September 11, briefly covering parts of Sayre City Park and a golf course, and leaving behind trash and other flood debris. Bankfull conditions were also observed farther downstream on the North Fork as the high water traveled through eastern Beckham County, and along the Greer-Kiowa county line to the headwaters of Altus-Lugert Lake.

Bankfull conditions also occurred along the Salt Fork of the Red River in southwestern Oklahoma. Three crests within a foot of flood stage were observed at the USGS river gage site on the Oklahoma Highway 34 Bridge at the city of Mangum on September 11.

OREGON, Central and East

Jefferson County

4 W Camp Sherman

01 0000PST 0 0 Wildfire

17 2359PST

The Booth and Bear Butte Fires began on August 19th and burned a total of 91,000 acres. The cause of the fire was determined to be prior lightning strikes which created hot spots that later flared up into a wildfire. Dry conditions and occasionally higher winds contributed to the growth of the fire. Hundreds of residents were evacuated from Camp Sherman. More than 2,000 personnel were involved in the Booth and Bear Butte Fires. The cost of fighting the fire totaled more than 32 million dollars.

Grant County

9 NE Prairie City

05 1400PST 0 0 Wildfire

12 2359PST

The Bull Springs 2 Fire was a lightning sparked fire which burned 1,266 acres. The estimated cost of containing the blaze was \$1,422,000.

OREGON, Northwest

Hood River County

Cascade Locks

02 0600PST 0 0 Wildfire

03 1800PST

The Herman Creek Fire burned 470 acres in and around Cascade Locks. Three structures (none inhabited) burned. About 200 homes were evacuated. No injuries were reported.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

OREGON, Southeast

NONE REPORTED.

OREGON, Southwest

Coos County Countywide

03 1200PST
2045PST

0 0

Lightning

See below.

Curry County Countywide

03 1200PST
2045PST

0 0

Lightning

See below.

Douglas County Countywide

03 1200PST
2045PST

0 0

Lightning

See below.

Jackson County Countywide

03 1200PST
2045PST

0 0

Lightning

See below.

Josephine County Countywide

03 1200PST
2045PST

0 0

Lightning

See below.

Klamath County Countywide

03 1200PST
2045PST

0 0

Lightning

See below.

Lake County Countywide

03 1200PST
2045PST

0 0

Lightning

See below.

A Red Flag Warning was issued for all of southern Oregon due to a line of thunderstorms approaching from the south containing dry lightning. The line weakened before arrival, but a number of strikes did occur over southern Oregon, just not enough to verify the Red Flag Warning.

Josephine County Takilma

05 0550PST
0745PST

0 0

Flash Flood

See below.

A Flash Flood Warning, effective at the above listed times, was issued for extreme southern Josephine county in southwest Oregon. The warning was based on radar precipitation estimates over an area of favored thunderstorm development. However, it appears that the radar estimates were overdone. Surveys of the RAWs in the area indicated little rainfall accumulation. A few hours after the warning expired, an NWS employee was sent to survey the area. He reported no flood damage or evidence of high waterflow on the creeks, but a person on the edge of the area of heavy rainfall received 1.6 inches of rain overnight. Therefore it appears that 2-3 inches of rain may have fallen in the area that got the most rainfall. However, it appears that the rain rate was low enough to allow most of it to soak into the ground. The NWS employee reported many fire starts as well, indicating that most of the area around the favored area remained relatively dry.

Coos County Countywide

12 0632PST
14 1105PST

0 0

Wildfire

See below.

Curry County Countywide

12 0632PST
14 1105PST

0 0

Wildfire

See below.

Josephine County Countywide

12 0632PST
14 1105PST

0 0

Wildfire

See below.

A Red Flag Warning was issued effective at the above times for fire weather zones 618/619, which includes nearly all of Curry county, a small part of southern Coos county, and a small part of western Josephine county. Strong offshore winds were expected. The strong winds occurred on the first night...but relative humidity recoveries were high enough not to verify the warning. The second night the winds abated but the recoveries were poor. Only the Red Mound RAWs in zone 619 verified the warning on that

Storm Data and Unusual Weather Phenomena

September 2003

September 2003										
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
<u>OREGON, Southwest</u>										
										night.
										However, this was a strong offshore event and a critical fire weather pattern, so the warning was justified as far as the fire weather agencies were concerned.
ORZ029>031			Klamath Basin - Northern & Eastern Klamath County & Western Lake County - Central & Eastern Lake County							
	15	1452PST			0	0				Frost/Freeze
	16	0800PST								
										See below.
										A Frost Warning was issued for the night of 09/15-16 for the above zones. Reported lows ranged from 27 to 50 degrees...so frost likely developed in sheltered areas.
ORZ029>031			Klamath Basin - Northern & Eastern Klamath County & Western Lake County - Central & Eastern Lake County							
	16	0300PST			0	0				Frost/Freeze
	17	0800PST								
										See below.
										A Frost Warning was issued for the night of 09/16-17 for the above zones. Reported lows ranged from 24 to 35 degrees except for one exceptional warm low of 47 degrees...so frost likely developed this night...a killing frost in many areas
ORZ029>031			Klamath Basin - Northern & Eastern Klamath County & Western Lake County - Central & Eastern Lake County							
	17	1445PST			0	0				Frost/Freeze
	18	0800PST								
										See below.
										A Frost Warning was issued for the night of 09/17-18 for the above zones. Reported lows ranged from 24 to 33 degrees except for one exceptionally warm low of 47 degrees...so frost likely developed this night...a killing frost in many areas.
Coos County Countywide	21	0635PST			0	0				Wildfire
	23	0610PST								
										See below.
Curry County Countywide	21	0635PST			0	0				Wildfire
	23	0610PST								
										See below.
Josephine County Countywide	21	0635PST			0	0				Wildfire
	23	0610PST								
										See below.
										A Red Flag Warning effective at the above listed time was issued for an offshore wind event with poor overnight RH recoveries for Fire Weather zones 618/619/Western 620. This warning included nearly all of Curry and Josephine counties, as well as a small portion of southern Coos county.
										This warning verified well at the Red Mound RAWS (zone 618), nearly verified at Quail Prairie (zone 619, but did not verify at the Onion Mountain RAWS (zone 620). However, it was a significant offshore event and the warning was justified.
Curry County Countywide	25	0710PST			0	0				Wildfire
	26	0730PST								
										See below.
										A Red Flag Warning was issued effective at the above times for fire weather zone 618, which covers the Curry county coast. This warning was for an expected offshore wind event with poor RH recoveries. None of the RAWS stations in the area verified the warning, but Red Mound came close, just barely missing the windspeed criteria but easily verifying the RH criteria.
Douglas County Countywide	26	1030PST			0	0				Wildfire
	27	1300PST								
										See below.
Jackson County Countywide	26	1030PST			0	0				Wildfire
	27	1300PST								
										See below.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

OREGON, Southwest

Josephine County

Countywide	26	1030PST			0	0			Wildfire
	27	1300PST							
	See below.								

Klamath County

Countywide	26	1030PST			0	0			Wildfire
	27	1300PST							
	See below.								

A Red Flag Warning, effective at the above times, was issued for the ridges of Fire Weather zones 620/621/623. This included all ridges in Josephine county, the western, southern, and eastern edges of Jackson county, far western Klamath county, and a very small portion of southeast Douglas county. Very dry conditions were expected with significant winds.

The Squaw Peak RAWs came closest to verifying the warning, but didn't quite make it. No other RAWs in the area approached warning criteria.

PACIFIC

NOT RECEIVED.

PACIFIC OCEAN

Pt St George Ca To Cp Blanco Or Wwd 20 To 60Nm

Brookings	03	1203PST 1259PST			0	0			Marine Tstm Wind
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See below.

Based on radar reports, a Special Marine Warning was issued for PZZ376 effective at the above times for a line of thunderstorms active in this zone. After the warning was issued, a report from the Coast Guard relayed by WFO EKA indicated that a vessel was in distress in the area. The next day, the Coast Guard at North Bend was contacted directly. They indicated that several boats were in distress near that time due to a sudden rise in winds and seas (3-4 feet building to 8-10 feet). These events occurred near the coast in the Brookings area. This was at least 20 miles away from the thunderstorms, but it appears that a wind shift boundary did move through the entire coastal waters and the thunderstorms offshore were associated with this boundary. Ultimately, no deaths or injuries occurred, but there were serious problems associated with the event.

Cascade Head Or To Cp Shoalwater Wa Wwd 20Nm

Clatsop Spit	16	0913PST			0	0			Waterspout
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Waterspout was reported 3 miles West of Seaside.

PENNSYLVANIA, Central

Franklin County

Waynesboro	01	2100EST 2215EST			0	0			Flash Flood
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Heavy rain caused rapid flooding across Franklin County, especially near the Waynesboro area. Route 997 at Anthony Highway, Nunnery Road, Wayne Road, Route 16 and Prices Church Road were all closed.

Lancaster County

Strasburg	15	1031EST 1900EST			0	0			Flash Flood
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PAZ066

Lancaster	15	1900EST 2100EST			0	0			Flood
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Heavy rainfall caused flooding across eastern portions of Lancaster County. Earlier rainfall left area streams and creeks above bankfull. Flooding continued along Pequea Creek near Paradise where stages reached 16 feet, well above the 12 foot flood level. A trailer park was evacuated. Flood waters slowly subsided and the creek was back within its banks by 21:00 EST.

PAZ005>006-019-
024>028-033>037-
042-045>046-
049>053-056>059-
063>066

Mckean - Potter - Southern Centre - Cambria - Blair - Huntingdon - Mifflin - Juniata - Somerset - Bedford - Fulton - Franklin - Tioga - Sullivan - Southern Clinton - Southern Lycoming - Union - Snyder - Montour - Northumberland - Columbia - Perry - Dauphin - Schuylkill - Lebanon - Cumberland - Adams - York - Lancaster

	18	1700EST			0	0			Tropical Storm
	19	0700EST							

Hurricane Isabel came ashore around midday on September 18th between Cape Hatteras and Cape Lookout, North Carolina. The storm continued on a northwesterly track up through Virginia where it was downgraded to a Tropical Storm, and by early Friday morning, September 19th, it was near Latrobe, PA and heading northwest at about 30 miles per hour. The storm exited Pennsylvania

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
Killed	Injured									

PENNSYLVANIA, Central

by early afternoon, the 19th, with improving conditions beginning state-wide.

Rain from the outer bands of Isabel reached southeastern areas of PA by about midday on Thursday, September 18th, and continued to spread northwestward across the remainder of the state throughout the day and evening hours. Heavy rain was falling in southern portions of the State College county warning area (CWA) by late afternoon. Gusty winds were also developing over these southern areas as well.

Rain and wind continued overnight, affecting most of State College's CWA into Friday morning. Rainfall amounts exceeded 3 inches in far southwestern areas, with much of the central CWA seeing in excess of 1 inch of rain. Far north and northeastern areas saw less than an inch on average.

Sustained winds of 30 mph on average accompanied Isabel as it tracked northward, but damaging gusts of between 50 and 60 mph occurred over a wide area. After a summer of above-normal rainfall, creating soft soils and with trees still in full bloom, the gusty winds resulted in hundreds of reports of trees or tree limbs being knocked down. These took down utility poles and power lines in many parts of the CWA, causing numerous power outages as well as property damage. Significant tree and power line damage was reported in 29 of State College's CWA counties, with the most significant damage over the lower Susquehanna region. Statewide, 1.4 million people lost power. The peak wind gust recorded was 73 mph in Lancaster County. One death (Lancaster County) was attributed to the storm, when a car struck a downed tree.

Snyder County Middleburg

**23 0130EST
1030EST 0 0 Flash Flood**

Heavy rain caused flooding along Middle Creek, Mahantango Creek and Penns Creek. Flooding was extensive throughout 4 townships in Snyder county, closing roads and flooding 4 homes.

Adams County Gettysburg

**23 0135EST
0815EST 0 0 Flash Flood**

Heavy rain caused Flash Flooding throughout Adams county. Significant flooding began around 1:30 AM EST, with numerous road closures reported throughout the county. One water rescue was performed. Dover Trailer Park was evacuated due to high water.

York County York

**23 0245EST
0807EST 0 0 Flash Flood**

Heavy rain caused Flash Flooding in Penn and Spring Garden Townships, in the towns of York and Hanover. Several Roads were closed by the rapidly rising water, including Route 182. Flooding occurred on the south branch of Codorus Creek

PAZ049>050

Union - Snyder

**23 0315EST
0830EST 0 0 Flood**

Heavy rainfall caused Penns Creek to exceed its flood stage of 8.0 feet. The creek exceeded flood state at 3:15 EST on Tuesday, September 23rd, crested at 8.4 feet at 5:15 EST, then fell back below flood stage at 8:30 EST on the 23rd.

Lancaster County Lancaster

**23 0429EST
0807EST 0 0 Flash Flood**

Heavy rain caused Flash Flooding throughout Lancaster County. Numerous roads were closed due to rapidly rising water. At least 10 water rescues were performed throughout the morning of the 23rd.

PAZ050

Snyder

**23 0430EST
1030EST 0 0 Flood**

Heavy rainfall caused flash flooding across much of Snyder County shortly after midnight on the night of the 23rd. Although flash flooding ended, high water and flooding continued along Middle Creek and Mahantango Creek in the western portions of the county through mid-morning. Numerous reports of road closures and basement flooding were received.

Dauphin County Harrisburg

**23 0455EST
0807EST 0 0 Flash Flood**

Heavy rain caused flooding in Harrisburg, Halifax and Elizabethtown. Two water rescues were performed. A spotter at Dehart Dam in northern Dauphin County reported 4.80 inches of rain overnight.

PAZ063-065

Cumberland - York

**23 0545EST
1530EST 0 0 Flood**

Heavy rainfall caused Yellow Breeches Creek at Camp Hill to exceed its flood stage of 7.0 feet. The creek exceeded flood stage at 5:45 EST on Tuesday, September 23rd, crested at 8.4 feet at 12:45 EST, then fell back below flood stage at 15:30 EST on the 23rd.

PAZ057

Dauphin

**23 0807EST
1300EST 0 0 Flood**

Heavy rainfall caused flash flooding across much of Dauphin County shortly after midnight on the night of the 23rd. Although flash

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Character of Storm
					Killed	Injured	Property	Crops
PENNSYLVANIA, Central								
PAZ065	23	flooding ended, high water and flooding continued into the early afternoon. Road closures, due to high water, also persisted along with the closure of the Dehart Dam Bridge, about 3 miles east of the Route 325/225 interchange. Clarks Creek also continued to overflow its banks into the early afternoon.						
		York						
		0807EST			0	0		Flood
		1300EST						
PAZ066	23	Heavy rainfall caused flash flooding across much of York County shortly after midnight on the night of the 23rd. Although flash flooding ended, high water and flooding continued into the early afternoon. Road closures, due to high water, also persisted. Flooding was occurring upstream from Indian Rock Dam in Manchester Township. Dam operators closed flood gates to prevent flooding downstream from the dam in the city of York, but water backed up along Codorus Creek in Manchester Township from these actions, closing roads due to the rising pool level behind the dam.						
		Lancaster						
		0807EST			0	0		Flood
		1300EST						
PAZ066	23	Heavy rainfall caused flash flooding across much of Lancaster County shortly after midnight on the night of the 23rd. Although flash flooding ended, high water and flooding continued into the early afternoon. Road closures, due to high water, also persisted, including portions of Route 772 and Route 322. Four additional water rescues were performed as people drove around barricades						
		Lancaster						
		1545EST			0	0		Flood
	24	0000EST						
Bedford County Breezewood	27	Heavy rainfall caused the Conestoga River at Lancaster to exceed its flood stage of 11.0 feet. The creek exceeded flood stage at 15:45 EST on Tuesday, September 23rd, crested at 12.6 feet at 19:30 EST, then fell back below flood stage at 00:00 EST on the 24th.						
		1500EST						
					0	0		Thunderstorm Wind (G50)
Trees and wires down in Breezewood.								
Bedford County 5 S Centerville	27	Heavy rainfall caused flooding over portions of Bedford county. The most extensive flooding occurred about 5 miles south of Centerville, where 3 to 4 feet of water was reported on Route 220. One family was trapped in their home off of Business Route 220 due to rapidly rising flood waters. Flooded roads included Belden Road, Route 326, Route 869 in New Enterprise, and Evitts Creek Road, which was closed due to a mudslide.						
		1630EST						
		1945EST			0	0		Flash Flood
Blair County Lakemont	27	Heavy rainfall caused significant flooding across Bedford county. The most extensive flooding occurred about 5 miles south of Centerville, where 3 to 4 feet of water was reported on Route 220. One family was trapped in their home off of Business Route 220 due to rapidly rising flood waters. Flooded roads included Belden Road, Route 326, Route 869 in New Enterprise, and Evitts Creek Road, which was closed due to a mudslide.						
		1700EST						
		2100EST			0	0		Flash Flood
Heavy rainfall caused significant flooding across Blair County. Extremely hard hit was the community of Lakemont, where portions of the community were reported as being "underwater" by 911 dispatchers. Although rain ended before 8 pm, significant flooding including closed and impassable roads continued through 10 pm.								
Centre County Julian	27	Heavy rains caused flooding in Centre County. Road flooding was reported throughout the county. Hard hit were the intersections of Routes 220 and 550 in Stormstown, and portions of Julian Pike which were washed away by flood waters.						
		1820EST						
		2045EST			0	0		Flash Flood
Huntingdon County Spruce Creek	27	Heavy rains caused flooding in Centre County. Road flooding was reported throughout the county. Hard hit were the intersections of Routes 220 and 550 in Stormstown, and portions of Julian Pike which were washed away by flood waters.						
		1820EST						
		2045EST			0	0		Flash Flood
Heavy rain caused flooding across much of Huntingdon county. Roads were flooded in the communities of Robertsedale, Alexandria and Spruce Creek.								

PENNSYLVANIA, East

Chester County **Countywide**

15 0537EST
16 0447EST

0 0 3.4M Flash Flood

Remnant moisture from Tropical Storm Henri produced copious amounts of rain during the early morning of the 15th across Chester County. The heaviest rain fell from Downingtown south through Kenneth Square. Thunderstorms with torrential downpours moved from south to north across the same areas and produced five to ten inches of rain across the region. The worst flood damage occurred in Downingtown and Kenneth Square. Numerous people were rescued from trapped vehicles and homes. The Red Clay Creek in Kenneth Square had a record crest of 14.99 feet at 9 a.m. EDT on the 15th. The East Branch of the Brandywine Creek in Downingtown had its second highest crest on record at 13.56 feet at 1130 a.m. EDT on the 15th. Flood Stage is 7 feet. Farther downstream, the Brandywine Creek at Chadds Ford had its sixth highest crest on record at 13.72 feet at 557 p.m. EDT on the 15th. Flood stage is 9 feet. The French Creek in Phoenixville had its 4th highest crest on record at 9.70 feet at 1215 p.m. EDT on the 15th. Flood stage is 8 feet. The Valley Creek at Valley Forge had its 4th highest crest on record at 8.94 feet at 530 p.m. EDT on the 15th. Flood stage is 7 feet. The West Branch of the Brandywine Creek at Honey Brook was briefly above its 7 foot flood stage from 619 p.m. through 703 p.m. EDT on the 15th. It crested at 7.03 feet at 630 p.m. EDT. Storm totals included 8.75 inches in Downingtown,

Storm Data and Unusual Weather Phenomena

September 2003

		Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		September 2003
Location	Date				Killed	Injured	Property	Crops	Character of Storm
<u>PENNSYLVANIA, East</u>									
6.57 inches in East Caln Township, 4.43 inches in Modena, 4.12 inches in Thorndale, 3.87 inches in Chadds Ford, 3.59 inches in West Chester and 3.50 inches in Glenmoore.									
Montgomery County Northwest Portion	15	0644EST 0933EST			0	0			Flash Flood
Montgomery County North Portion	15	1416EST 2319EST			0	0			Flash Flood
Remnant moisture from Tropical Storm Henri produced copious amounts of rain during the morning and again during the laet afternoon and early evening across northern sections of Montgomery County. The heaviest rain fell across Douglass Township, Lower Pottsgrove Township, Upper Pottsgrove Township, West Pottsgrove Township and Pottstown. Doppler Radar storm total estimates reached between 6 and 8 inches. Thunderstorms with torrential downpours moved from south to north across the same areas during the morning and another band of heavy rain moved through during the afternoon. There was widespread poor drainage flooding as well as flooding of creeks and streams. The Manatawny Creek in Pottstown flooded twice on the 15th. It was above its 6 foot flood stage from 744 a.m. through 1033 a.m. EDT on the morning of the 15th. It crested at 7.03 feet at 845 a.m. EDT. It was again above flood stage from 316 p.m. through 657 p.m. EDT. It crested at 6.73 feet at 515 p.m. EDT. The Perkiomen Creek at Graterford was above its 11 foot flood stage from 516 p.m. EDT on the 15th through 1219 a.m. EDT on the 16th. It crested at 12.43 feet at 745 p.m. EDT on the 15th. Flood stage is 11 feet. Farther upstream, the West Branch of the Perkiomen Creek at Hillegass was briefly above its 5 foot flood stage from 354 p.m. through 437 p.m. EDT on the 15th. It crested at 5.02 feet at 4 p.m. EDT. Storm totals included 6.02 inches in Pottstown, 5.06 inches at the Pottstown Airport and 4.70 inches in Palm.									
Berks County East Portion	15	0730EST 2119EST			0	0			Flash Flood
Remnant moisture from Tropical Storm Henri produced copious amounts of rain during the morning of the 15th across eastern sections of Berks County. The heaviest rain fell from Douglass Township northeast through Washington Township. Doppler Radar storm total estimates reached between 6 and 8 inches. Thunderstorms with torrential downpours moved from south to north across the same areas during the morning. There was widespread poor drainage flooding as well as flooding of creeks and streams. The Manatawny Creek in Spangville was above its 6 foot flood stage from 522 p.m. through 1019 p.m. EDT on the 15th. It crested at 6.48 at 830 p.m. EDT. Storm totals included 5.23 inches in Bechtelsville, 2.80 inches in Morgantown and 2.70 inches in Hamburg.									
Delaware County Countywide	15 16	0929EST 0447EST			0	0			Flash Flood
Remnant moisture from Tropical Storm Henri produced copious amounts of rain during the morning and again during the late afternoon across Chester County and far northwestern Delaware County. Runoff from the upstream heavy rain caused significant flooding along the Brandywine Creek and minor flooding along Chester and Crum Creeks. The Brandywine Creek at Chadds Ford was above its 9 foot flood stage from 1029 a.m. EDT on the 15th through 547 a.m. EDT on the 16th. It crested (sixth highest ever) at 13.72 feet at 557 p.m. EDT on the 15th. Chester Creek in Chester was above its 8 foot flood stage from 629 p.m. EDT through 740 p.m. EDT on the 15th. It crested at 8.15 feet at 7 p.m. EDT. Crum Creek at Newtown Square was above its 6 foot flood stage from 621 p.m. EDT through 928 p.m. EDT on the 15th. It crested at 6.72 feet at 730 p.m. EDT. Storm totals included 3.87 inches in Chadds Ford.									
Lehigh County Countywide	15	1700EST 2000EST			0	0			Flash Flood
Remnant moisture from Tropical Storm Henri produced copious amounts of rain during the morning and again during the late afternoon and early evening across Lehigh County. The heaviest rain fell across Upper and Lower Milford Townships in the southwest part of the county and Washington Township and Slatington Borough in the northeast part of the county. Doppler Radar storm total estimates ranged between 2 and 6 inches. Thunderstorms with torrential downpours moved from south to north across the same areas during the morning and another band of heavy rain moved through during the late afternoon. The second band was too much for area streams to handle. Storm totals included 3.45 inches at the Lehigh Valley International Airport.									
Northampton County Southwest Portion	15	1730EST 1930EST			0	0			Flash Flood
Remnant moisture from Tropical Storm Henri produced copious amounts of rain during the morning and again during the late afternoon and early evening across southwestern sections of Northampton County. The heaviest rain fell across Lower Saucon Township and Hellertown Borough. Doppler Radar storm total estimates reached between 2 and 4 inches. Thunderstorms with torrential downpours moved from south to north across the same areas during the morning and another band of heavy rain moved through during the late afternoon. The second band was too much for area streams to handle. Storm totals included 3.92 inches in Walnutport Borough.									
Bucks County Northwest Portion	15	1735EST 1930EST			0	0			Flash Flood
Remnant moisture from Tropical Storm Henri produced copious amounts of rain during the morning and again during the late afternoon and early evening across northwestern sections of Bucks County. The heaviest rain fell across Milford Township and									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
Killed	Injured									

PENNSYLVANIA, East

Trumbauersville Borough. Doppler Radar storm total estimates reached between 3 and 4 inches. Thunderstorms with torrential downpours moved from south to north across the same areas during the morning and another band of heavy rain moved through during the late afternoon. There was widespread poor drainage flooding as well as flooding of creeks and streams. Storm totals included 2.94 inches in Perkasio.

PAZ054>055-060>062-067>071 Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia

18	1600EST	0	0	High Wind (G52)
19	0500EST			

Chester County	19	0120EST	0	0	Flash Flood
Valley Forge		0151EST			

PAZ069>071 Bucks - Delaware - Philadelphia	19	0300EST	0	1	Storm Surge
		1800EST			

Tropical Storm Isabel produced strong power outage producing winds, moderate tidal flooding along the Delaware River and stream flooding in Chester County. Isabel made landfall as a hurricane near Drum Inlet, North Carolina around 100 p.m. EDT on the 18th and weakened as it tracked farther inland. At one time in its life cycle, it was a powerful Category 5 hurricane when it was north of the Leewood Islands. Winds gusted up to 60 mph in Eastern Pennsylvania and downed countless numbers of trees, tree limbs and power lines. It was the worst outage on record for PECO Energy in southeastern Pennsylvania. About 572,425 of its customers lost power. This exceeded the outages that occurred during the ice storm of January 1994. Isabel's track took into western Pennsylvania and was able to funnel water into Delaware River and Bay. Moderate tidal flooding occurred. In Philadelphia, the tide crested at 9.47 feet above mean lower low water. The storm surge was 5.43 feet. The rain was not heavy and the only reported gaged stream flooding was in Chester County. The heaviest rain with tropical systems often falls west of its storm track, thus the region was spared from the heavier rain.

Peak wind gusts included 60 mph in Forks Township (Northampton County), 49 at the Philadelphia International Airport and the Reading Regional Airport (Berks County), 47 mph at the Lehigh Valley International Airport and 46 mph at the Pocono Mountains Regional Airport (Monroe County). The Valley Creek at Valley Forge (Chester County) was above its 7 foot flood stage from 220 a.m. through 251 a.m. EDT on the 19th and crested at 7.26 feet at 230 a.m. EDT. Storm totals included 1.50 inches in Valley Forge (Chester County), 1.35 inches in Glenmoore (Chester County), 1.16 inches at the Lehigh Valley International Airport, 1.14 inches at the Philadelphia International Airport and 0.81 inches in Mount Pocono (Monroe County).

Chester County	23	0540EST	0	0	Thunderstorm Wind (G65)
Paoli					

A powerful line of severe thunderstorms uprooted hundreds of trees in Paoli (Tredyffrin Township). Several homes were damaged and one detached garage was blown off its foundation.

Delaware County	23	0615EST	0	0	Thunderstorm Wind (G61)
Havertown					

A powerful line of severe thunderstorms uprooted whole trees in Havertown (Haverford Township).

Montgomery County	23	0620EST	0.8	100	0	0	Tornado (F1)
Narberth		0621EST					

An F1 tornado touched down along the Lower Merion Township side of the Narberth Borough/Lower Merion Township line. The tornado then proceeded east into Narberth Borough and remained on the ground for three-quarters of a mile. Wind damage was mainly whole trees and wires that were knocked down. A few trees fell on homes. Maximum estimated wind speed was 75 mph.

Philadelphia County	23	0625EST	0	0	Thunderstorm Wind (G52)
Philadelphia		0705EST			

A powerful line of severe thunderstorms uprooted several trees in Philadelphia.

Bucks County	23	0640EST	0	0	Thunderstorm Wind (G52)
Solebury					

A powerful line of severe thunderstorms uprooted trees and downed wires in Buckingham and Solebury Townships.

Bucks County	28	0050EST	0	0	Flash Flood
Central Portion		0300EST			

Thunderstorms with heavy rain dropped a Doppler Radar storm total estimate of 3 to 4 inches across central Bucks County between Doylestown and Perkasio. Flooding of smaller streams occurred.

PENNSYLVANIA, Northeast

Luzerne County	03	1205EST	0	0	20K	Lightning
Pittston						

Lightning hit a house on Rock Street in Pittston Township starting a fire in the attic. The fire left a hole in the roof. Water and smoke damage was reported throughout the house.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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PENNSYLVANIA, Northeast

Lackawanna County

Countywide

03 2300EST
04 0500EST
0 0 5M Flash Flood

1 to 3 inches of heavy rain in a short period of time caused rapid flash flooding of streams and urban areas. The ground was already saturated from several inches that fell on September 2nd. Most areas in the county had some flooding. The worst flooding was in the townships of Jermy, Carbondale, Mayfield, and Scott. The Lackawanna River at Archbald crested at 10.2 feet which is above its 8 foot estimated flood stage. The Lackawanna River went out of its banks in many towns and cities including Scranton. A 58 year old man trying to get to his car in Carbondale had a heart attack and died. Hundreds of people were evacuated in the middle of the night. Many homes had several feet of water in basements. In Jermy a few houses had debris pushed into their basements due to the flooded Rushbrook Creek. Also in Jermy, slabs of cement and pavement were upturned, bridges washed out, and roads undermined and washed out. Some repairs to roads in the county will take several weeks. Many cars were caught in the flood.

Wayne County

Central Portion

04 0000EST
0400EST
0 0 1.5M 20K Flash Flood

1 to 3 inches of heavy rain in less than 6 hours caused flash flooding. The ground was already saturated due to several inches of rain that fell on September 2nd. Dyberry creek came out of its banks in many locations. Mount Pleasant, Dyberry, Damascus and Oregon Townships, and the Borough of Honesdale were the most affected. A few bridges were damaged. One bridge in Oregon Township will have to be replaced by a new bridge. Several roads were washed out. Many people had water in their basements.

Bradford County

Towanda to Stevensville

04 1820EST
2030EST
0 0 100K Flash Flood

Numerous roads and streets floods in the townships of Towanda, Ulster, Wysox, and Stevens. 3 feet of water was on some streets in the borough of Towanda. Numerous roads were closed off. Route 6 in Towanda had a foot of water on it. 1 to 2 inches of rain fell in a short amount of time on already saturated ground.

Bradford County

Wysox

04 1830EST
0 0 5K Hail (1.75)

Golf ball sized hail.

Bradford County

Stevensville

04 1900EST
0 0 50K Thunderstorm Wind (G60)

Numerous trees fell along Route 706 near Stevensville in southern Stevens Township. Damage continued east over Clapper Hill Road where approximately 100 trees were sheared off along the hillside. Nearby along another hillside numerous trees were sheared off. A gas tank was thrown through a field. Eyewitness report along with a storm survey show damage was consistent with a microburst.

Susquehanna County

Auburn Center to Clifford

04 1910EST
1940EST
0 0 50K Thunderstorm Wind (G60)

Numerous trees down in the townships of Auburn, Springville, and Clifford. In Springville, many trees fell along State Routes 3004 and 3006. A couple of houses had trees fall on the roofs.

Susquehanna County

Auburn Center to Clifford

04 1930EST
2130EST
0 0 100K Flash Flood

Thunderstorms with heavy rain caused streams to overflow their banks onto roads in Auburn, Springville, and Clifford. 1 to 2 inches of rain fell in a short period of time on already saturated ground.

PAZ038>040-

043>044-047>048

Bradford - Susquehanna - Wayne - Wyoming - Lackawanna - Luzerne - Pike

19 0500EST
1800EST
0 0 350K High Wind (G50)

Remnants of hurricane Isabel moved up through western Pennsylvania and western New York on the 19th. It brought with it high winds. Most locations had gusts to between 40 and 50 mph, but higher elevations may have had higher gusts. Scattered reports of trees and wires down were common. Tens of thousands of electric customers were without power. A few trees and wires fell on cars and houses, and closed roads.

PENNSYLVANIA, Northwest

Erie County

Erie

27 0230EST
0 0 3K Thunderstorm Wind (G50)

Thunderstorm winds downed a few large tree limbs.

Crawford County

Conneaut Lake

27 0420EST
0 0 3K Thunderstorm Wind (G50)

Thunderstorm winds downed a few large tree limbs.

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
KilledInjuredPropertyCrops									
PENNSYLVANIA, West									
Lawrence County 6 E New Castle	01	2220EST			0	0			Flash Flood
	02	0030EST							
Herman Church Rd flooded near Route 422.									
Venango County Barkeyville	01	2230EST			0	0			Flash Flood
		2330EST							
Route 8 flooded just south of Barkeyville.									
Lawrence County Neshannock Falls to Eastbrook	01	2236EST			0	0			Flash Flood
	02	0100EST							
Neshannock Creek flooded in Hickory Twp, along Neshannock and East Brook Roads									
Venango County Emlenton Station	01	2236EST			0	0			Flash Flood
		2345EST							
State Route 38 flooded.									
Butler County Chicora	01	2300EST			0	0			Flash Flood
	02	0030EST							
Hooker Road flooded.									
Lawrence County Neshannock Falls to 4 E Neshannock Falls	01	2300EST			0	0	90K		Flash Flood
	02	0115EST							
Flooding caused a house to collapse in Neshannock Twp, and a road to collapse between Neshannock and Washington Townships. Trailer court evacuated									
Clarion County Shipperville	01	2300EST			0	0			Flash Flood
	02	0100EST							
Route 208 flooded.									
Jefferson County Sigel	01	2300EST			0	0			Flash Flood
	02	0100EST							
Road flooded.									
Clarion County Strattanville	01	2315EST			0	0			Flash Flood
	02	0100EST							
Road flooded.									
Lawrence County New Castle	03	0410EST			0	0			Flash Flood
		0615EST							
Mercer Rd flooded.									
Lawrence County New Castle	03	0510EST			0	0			Flash Flood
		0615EST							
Cedar and Lafayette Streets flooded.									
Beaver County Fombell to 2 S Fombell	09	1555EST			0	0	5K		Flash Flood
		1730EST							
Herman Rd in Marion Twp flooded. Soap Run Rd in Franklin Twp flooded. Flood waters running into house in Fombell.									
PAZ016-023-030-032	18	2330EST			0	0	8K		High Wind (G52)
	19	0200EST							
Remnants of Hurricane Isabel caused wind gusts in the neighborhood of 60 mph, knocking down trees and utility lines in various sections of these counties. Isabel passed over Pittsburgh around 8 AM EDT on the 19th. Wind gusts from Isabel started after 7 PM on the 18th and continued, from time to time, through the afternoon of the 19th.									
PUERTO RICO									
Southwest Lajas	02	1500AST			0	0			Heavy Rain
		1600AST							
Showers and isolated thunderstorms developed during the early afternoon across the central and interior part of the island causing minor street flooding in Lajas as the moved southwest. The heavy downpours lasted about 15 minutes									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
Killed	Injured									

PUERTO RICO

PRZ001-001

San Juan And Vicinity

03 1030AST

1

0

30K

Heavy Surf/High Surf

04 2235AST

Long period swells generated by Hurricane Fabian combined with unusually high tides to produce large breaking waves that affected the north...northwest and east coastal areas of Puerto Rico, including Vieques and Culebra. Waves slammed into three blocks of sea wall in Ocean Park, knocking out a 10 foot section at a construction site. The beach in front of the Jose Celso Barbosa Park was washed away. On Thursday the three blocks of beach from the Ultimo trolley area to Hosteria del Mar was impassable as large waves rolled in and slammed into the wall. M37IW

Mayaguez And Vicinity

Moca

05 1850AST

0

0

Funnel Cloud

A funnel cloud was reported in Las Marias sector of Moca moving towards the town.

Northeast

Ceiba

08 1355AST

0

0

Thunderstorm Wind (G52)

1515AST

Intense thunderstorms was reported across the municipality of Ceiba by Roosevelt Roads Weather Office.

Northeast

Ceiba

08 1545AST

0

0

8K

Flash Flood

1730AST

Isolated strong thunderstorms produced heavy rainfall along the coastal section of Ceiba causing flooding along Highway 3. Several cars were reported flooded near Quebrada Seca along the intersection with road 53 due to poor drainage.

Northeast

Naguabo

08 1550AST

0

0

20K

Flash Flood

1730AST

Twenty houses were flooded due to river Dagauo overflowing its banks.

Mayaguez And Vicinity

Aguada

12 1400AST

1

0

7K

Flash Flood

1500AST

A 50 year old female was washed away by the initial flood crest at the Chuco Ramos Sector of Barrio Piedras Blancas when she attempted to make a low water crossing in her vehicle.

F50VE

PRZ006

Central Interior

18 1500AST

0

0

0.50K

Strong Wind

A resident of Barrio Las Cumbres Romero in Villalba reported strong gusty winds that blew away some zinc roof shingles from his home.

North Central

Arecibo

20 1056AST

0

0

Heavy Rain

1356AST

Urban flooding was reported along the entrance to the town of Barceloneta.

San Juan And Vicinity

San Juan

20 1925AST

0

0

Heavy Rain

2125AST

Urban flooding was reported in Barrio Obrero, San Jose and Hato Rey.

Northeast

Fajardo

20 1955AST

0

0

Heavy Rain

2155AST

Spotter from Fajardo reported urban flooding along road 195 towards the beach.

Western Interior

Adjuntas

21 1252AST

0

0

2K

Flash Flood

2100AST

A flooded house was reported at Barrio Castañer, Villa Rica sector.

Western Interior

Lares

21 1330AST

0

0

Heavy Rain

1430AST

Downed power lines and a tree was reported at Las Campanas sector, road 454.

San Juan And Vicinity

Trujillo Alto

21 1356AST

0

0

200K

Flash Flood

2000AST

Many sectors of Trujillo Alto were reported flooded as three small streams went out of their banks. Quebrada La Leprosa, La Cepero, and Blasina. Fourteen families were affected by flood waters at Sector Hoyo 2, road 845.

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
PUERTO RICO									
San Juan And Vicinity Bayamon	21	1416AST 2100AST			0	0			Heavy Rain
A house was reported flooded at Jardines de Caparra urbanization.									
San Juan And Vicinity Carolina	21	1431AST 2000AST			0	0	3K		Flash Flood
Several homes and roads were reported flooded in Saint Just, Villa Carolina, San Francisco Street. Eleven families were affected at Betania Street in Saint Just.									
San Juan And Vicinity San Juan	21	1435AST 2000AST			0	0	3K		Flash Flood
Several homes were reported flooded in Villa Nevarez, Villa Olimpica and Barriada Israel.									
Northeast Luquillo	21	1443AST 2000AST			0	0	2K		Flash Flood
Road 992 was reported flooded. Flooded homes were reported in Comunidad El Hoyo and at Barrio Fortuna.									
Eastern Interior Cayey	21	1448AST 2000AST			0	0	2K		Flash Flood
Flooded home along road 1 at Jesus T. Pineiro.									
Northeast Rio Grande	21	1500AST 2100AST			0	0			Heavy Rain
Several homes were reported flooded at Barrio Palmer, Rio Grande affecting seven families. The bridge at the Muñiz-Muñiz sector along road 967 at Barrio Tres T collapsed, isolating 35 families.									
Eastern Interior Caguas	21	1517AST 2000AST			0	0	60K		Flash Flood
Many homes and roads were reported flooded in Caguas.									
Eastern Interior Cidra	21	1518AST 2100AST			0	0	2K		Flash Flood
A house was reported flooded at the urbanization Ciudad Primavera.									
North Central Manati	21	1518AST 2100AST			0	0			Flash Flood
A house was reported flooded at Barrio Tierras Nuevas, El Hono sector. Several roads and highways were reported flooded like 685, 604, 643 and higway 2.									
Central Interior Morovis	21	1532AST 2100AST			0	0			Flash Flood
Several homes were reported flooded at Barrio Barahona and Torrecillas. Eight families were affected.									
PRZ006-006>007									
Central Interior - Ponce And Vicinity	21	1606AST 2100AST			0	0			Landslide
Landslide was reported along road 167, at La Mulita sector in Naranjito.									
Eastern Interior Aguas Buenas	21	1725AST 2100AST			0	0	3K		Flash Flood
Several homes and roads were reported flooded.									
A weak tropical wave entering the Lesser Antilles interacted with mid to upper level low pressure located northwest of Puerto Rico to generate heavy rains , landslides and flash flooding over many municipalities. Some events were urban flooding, others like in Trujillo Alto more serious flash flooding due to heavy rains.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

PUERTO RICO

Central Interior

Corozal

24

1840AST
2047AST

0

0

Flash Flood

In the headwaters of Rio Cibuco water covered a bridge and part of road 807. Some small streams were reported out of their banks and some mudslides occurred.

RHODE ISLAND

RIZ006

Washington

18 1130EST

1

0

Heavy Surf/High Surf

A 67-year old man drowned off the coast of Narragansett. High surf associated with Hurricane Isabel caused him to lose his footing near Black Point, sweeping him into the water. M67OT

SOUTH CAROLINA, Central

Saluda County

1 NW Batesburg

04

1535EST

0

0

0

Thunderstorm Wind (G50)

Police reported a couple of trees and powerlines down on hwy 178.

Lexington County

Batesburg

04

1540EST

0

0

0

Thunderstorm Wind (G50)

Police reported a few trees down in Batesburg around Summerland and Youman streets.

SOUTH CAROLINA, North Coastal

NONE REPORTED.

SOUTH CAROLINA, Northwest

Laurens County

Laurens

04

1210EST

0

0

1K

Thunderstorm Wind (G50)

Some power lines were blown down.

Laurens County

Clinton

04

1250EST

0

0

1K

Thunderstorm Wind (G50)

Two trees were blown down on Bond Street. Power lines were knocked down as the trees fell.

Greenwood County

Greenwood

04

1530EST

0

0

1K

Lightning

Lightning struck a house and an apartment complex, causing some minor damage.

Oconee County

Countywide

22

1600EST
1800EST

0

0

Heavy Rain

Pickens County

Countywide

22

1600EST
1900EST

0

0

Heavy Rain

A strong storm system produced very heavy rainfall over portions of the Upstate, resulting in some urban and small stream flooding during the early evening. Near Easley, water was up to a foot deep along highway 123. More significant flooding developed in Pickens County later in the evening.

Oconee County

Mountain Rest to Westminster

22

1700EST
1800EST

0

0

Thunderstorm Wind (G55)

Numerous trees were blown down, particularly in areas north of Walhalla.

Pickens County

Pickens

22

1900EST
2000EST

0

0

Flash Flood

A strong storm system produced very heavy rainfall across portions of the Upstate, which resulted in some flooding across Pickens County. A creek flooded part of City Lake Road. Flooding of urban and poor drainage areas was fairly widespread across the county

SOUTH CAROLINA, South Coastal

Dorchester County

1 NW Jedburg

08

0845EST
0930EST

0

0

Flash Flood

Heavy rain flooded Cypress Campground Road and Grapevine Road.

Berkeley County

1 NW Moncks Corner 1 S Moncks Corner

08

0905EST
0945EST

0

0

Flash Flood

Heavy rain flooded US Route 52, US Route 17A, and Stoney Landing Road.

SOUTH DAKOTA, Central and North

Edmunds County

10 NE Ipswich

10

1500CST

0

0

Hail (0.75)

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
<u>SOUTH DAKOTA, Central and North</u>									
Mcperson County									
4 SE Leola	10	1530CST			0	0			Hail (0.75)
Brown County									
8 NW Frederick	10	1600CST			0	0			Hail (0.75)
Clark County									
4 S Garden City	17	2130CST			0	0			Hail (0.75)
Codington County									
5 NE Wallace	17	2200CST			0	0			Hail (0.75)
Day County									
12 SW Waubay	17	2201CST			0	0			Hail (0.88)
Day County									
1 N Waubay	17	2245CST			0	0			Hail (0.88)
<u>SOUTH DAKOTA, Southeast</u>									
Jerauld County									
9 W Wessington Spgs	17	2058CST			0	0			Hail (0.75)
Brule County									
Chamberlain	17	2103CST			0	0			Hail (1.00)
Beadle County									
9 SW Virgil	17	2118CST			0	0			Hail (0.75)
Beadle County									
7 W Virgil	17	2121CST			0	0			Hail (1.00)
<u>SOUTH DAKOTA, West</u>									
SDZ001-013-031>032	Harding - Northern Meade Co Plains - Pennington Co Plains - Haakon								
10	1149MST				0	0	0	0	High Wind (G53)
	1707MST								
A strong storm system moved across the Northern Plains during the day, bringing heavy rains and strong winds to much of northwest and west central South Dakota. Northwest winds increased to 30 to 45 mph late in the morning and continued through the afternoon. Wind gusts to near 60 mph were recorded across areas from Faith to Philip during the late afternoon hours.									
<u>TENNESSEE, Central</u>									
Davidson County									
11.8 SE Nashville	22	0500CST 0830CST			0	0	83K		Flash Flood
Davidson County Office of Emergency Management reported Mill Creek overflowed its banks and came onto the intersection of Nolensville Road and Bluff Road. A Mercedes-Benz was swept downstream, and a person had to be rescued from the top of his car									
Davidson County									
6 SE Nashville	22	0530CST 1000CST			0	0			Flash Flood
Hamilton Church Pike was flooded and impassable.									
Davidson County									
Nashville	22	0545CST 1000CST			0	0			Flash Flood
Spotter reported a foot of water at the intersection of Bell Road and I-24.									
Davidson County									
Nashville	22	0630CST 1000CST			0	0			Flash Flood
Flooding was occurring on Thompson Lane and Old Glenn Rd. Mill Creek was out of its banks.									
Maury County									
3 NE Columbia	22	0630CST 1000CST			0	0			Flash Flood
Spotter reported street flooding on Baker Road and Carters Creek Rd. Some motorists were temporarily stranded on several rural roads according to newspaper accounts.									
Rutherford County									
La Vergne	22	0630CST 0830CST			0	0			Flash Flood
Newspaper account of a road closed in La Vergne due to high water, at Old Nashville Highway, under the railroad underpass									
Rutherford County									
Murfreesboro	22	0630CST 0830CST			0	0			Flash Flood
TDOT reported a few streams were out of their banks, but no roads were flooded. There was high water on some slabs. High water was reported at the intersection of Old Nashville Highway and Lokey Avenue, at the railroad overpass.									

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
<u>TENNESSEE, Central</u>									
Williamson County 8.9 NE Franklin	22	0630CST 0800CST			0	0			Flash Flood
The Brentwood YMCA parking lot was flooded.									
Davidson County 13 ESE Nashville	22	0700CST 1000CST			0	0	10K		Flash Flood
Tulip Grove Road was closed and barricaded due to high water about 1/2 mile south of the intersection of Lebanon Pike and Tulip Grove Road. Stoner Creek was out of its banks at this location. Also, Stoner Creek flooded a home on Andrew Jackson Parkway in Hermitage.									
Wilson County 3 SW Mt Juliet	22	0700CST 1000CST			0	0			Flash Flood
About 6 inches of water on several low spots on Central Pike in Wilson County.									
Clay County Countywide	22	0726CST 1200CST			0	0			Flash Flood
Sheriff's office reported high water on many roads around the county.									
Dekalb County Alexandria	22	0730CST 1000CST			0	0			Flash Flood
Local Police Department reported 6 to 12 inches of water on roads.									
Dekalb County Smithville	22	0730CST 1000CST			0	0			Flash Flood
Local Police Department reported 6 to 12 inches of water on roads.									
Macon County 3 N Lafayette	22	0730CST 1000CST			0	0			Flash Flood
TDOT reported 11/2 foot of water on Shiloh Road.									
Marshall County North Portion	22	0730CST 1000CST			0	0			Flash Flood
TDOT placed high water signs on roads in the northern part of the county.									
Moore County Lynchburg	22	0730CST 1000CST			0	0			Flash Flood
Sheriff's office reported a few streams out of their banks.									
Overton County Countywide	22	0730CST 1200CST			0	0			Flash Flood
TDOT reported high water on many roads throughout the county.									
Sumner County Countywide	22	0730CST 1000CST			0	0	10K		Flash Flood
TDOT reported many roads were closed due to high water in Gallatin, Hendersonville, Bethpage and Westmoreland. In a new subdivision off Harris Road in Portland, water got into a home on Willow Court									
White County Countywide	22	0730CST 1030CST			0	0			Flash Flood
Sheriff's office reported 6 to 12 inches of water on many roads around the county.									
Wilson County Mt Juliet	22	0730CST 1000CST			0	0	20K		Flash Flood
Flooding was occurring at the intersection of Old Lebanon Dirt Road and Mt. Juliet Road. Water was getting into a bank and into some homes. Flooding was occurring at a nearby parking lot of a strip mall, named Valley Center. Two men were seen canoeing in a Little League ball field in Mt. Juliet.									
Grundey County Pelham	22	0800CST 1200CST			0	0			Flash Flood
Sheriff's office reported high water on many roads throughout the county, but Pelham was the hardest hit due to road closures.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

TENNESSEE, Central

Wilson County 4 NW Mt Juliet	22	0810CST 0930CST			0	0			Flash Flood
			NWS employee reported Needmore Road was closed due to Shutes Branch coming out of its banks.						
Putnam County Cookeville	22	0930CST 1200CST			0	0			Flash Flood
			High water over roads.						
Van Buren County Countywide	22	0930CST 1200CST			0	0			Flash Flood
			Sheriff's office reported 6 inches of water on many roads throughout the county.						
Cumberland County Crab Orchard	22	1015CST 1200CST			0	0			Flash Flood
			Heavy rains produced a mudslide along Interstate 40.						
Cumberland County Crossville	22	1015CST 1200CST			0	0			Flash Flood
			Many roads were under high water.						
Fentress County East Portion	22	1030CST 1230CST			0	0			Flash Flood
			Several roads were under water across the eastern part of the county, including Allardt.						
White County Sparta	27	1009CST			0	0			Thunderstorm Wind (G50)
			Trees were blown down in the city.						
Cumberland County Crossville	27	1040CST 1042CST			0	0			Thunderstorm Wind (G51)
			Emergency Manager estimated wind gusts up to 60 mph at 1042 AM CST. Metal canopies and power lines were down at intersection of U.S. Highway 70 and Elmore. Also, a large Kroger sign was blown down. About a dozen trees were blown down at an industrial park along U.S. Highway 127. The strong winds blew down a large Taco Bell sign and a large McDonald sign.						

TENNESSEE, East

Hawkins County Van Hill	27	1415EST			0	0	15K		Thunderstorm Wind (G55)
			Trees were reported down on power lines.						
Greene County Jearoldstown	27	1430EST			0	0	9K		Thunderstorm Wind (G55)
			A few trees were reported down in Jearoldstown.						
Sullivan County Countywide	27	1445EST			0	0			Hail (0.88)
			Nickel sized hail was reported across the county.						
Sullivan County Blountville	27	1515EST			0	0	6K		Thunderstorm Wind (G55)
			Two trees were reported down in Blountville.						

TENNESSEE, West

NONE REPORTED.

TEXAS, Central

Mason County Countywide	11	1645CST 1845CST			0	0	1K		Flash Flood
			Thunderstorms ahead of a cold front produced up to four inches of rain over Mason county in the late afternoon and evening of the 11th. This produced significant flooding in the city of Mason and secondary roads throughout the county.						
Mason County 8 W Mason	11	1840CST			0	0	2K		Thunderstorm Wind (G61)
			Strong thunderstorm winds ripped shingles off of a roof and knocked down tree limbs.						

Storm Data and Unusual Weather Phenomena

September 2003

								September 2003
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm	
<u>TEXAS, Central</u>								
Brown County Brownwood	14	0430CST 0800CST			0 0	10K	Flash Flood	
Rainfall of up to 5 inches fell on the city of Brownwood causing significant flooding of streets. Some homes also had some minor flooding for a short time.								
Mcculloch County East Portion	14	0800CST 1000CST			0 0		Flash Flood	
Numerous highways in the eastern portion of Mcculloch county had water over them								
San Saba County Northwest Portion	14	0830CST 1030CST			0 0		Flash Flood	
Numerous roads in the northern and western portions of the county were under water for several hours after rainfall amounts of 3 to 5 inches occurred.								
Mcculloch County 15 NE Brady	25	1744CST 2000CST			0 0		Flash Flood	
Secondary roads in the northeast portion of the county were under water for several hours after heavy rains.								
<u>TEXAS, Central Southeast</u>								
TXZ164-177-214-236>238	Trinity - Walker - Chambers - Matagorda - Brazoria - Galveston							
	01 02	0000CST 1500CST			0 0	63K	Tropical Storm	
This flash flood event was from the remnants of Tropical Storm Grace. Grace's broad and poorly defined center moved inland between Port O'Connor and Freeport on the last day of August. Heavy rains before and after landfall resulted in flash flooding across mainly upper Texas coastal areas. These heavy rains continued into the first two days of September as remnant feeder bands continued to develop and move across portions of Southeast Texas.								
Heavy rainfall between 6 and 15 inches was observed from extreme eastern Galveston County to across the Bolivar Peninsula and northward into Chambers and portions of Liberty Counties. Some roads were flooded in these areas. A secondary area of very heavy rainfall was over southern Matagorda County where an estimated 6 to 12 inches was observed. The majority of this rain fell in the early morning hours of September 1st. The Corps of Engineers at the Matagorda River Locks (Matagorda, Matagorda County) reported 9 inches of rain between 1 AM and 7 AM CST on that day. This heavy rainfall flooded roads and a few homes.								
Rainfall totals from the 1st and 2nd included 1.42 inches in Galveston, 2.92 inches at Jamaica Beach, 4.75 inches in Freeport, and 9.50 inches in Matagorda. Much of the rain that occurred these two days fell on extremely saturated grounds which lead to the flash flooding.								
Matagorda County Matagorda	01	0345CST 0730CST			0 0	30K	Flash Flood	
Flooding in and around Matagorda, three homes flooded on South 60.								
Chambers County East Portion	01	0715CST 0845CST			0 0	3K	Flash Flood	
High water across Hwy 124 between Winnie and High Island.								
Galveston County Countywide	01	0715CST 0845CST			0 0	4K	Flash Flood	
High water across Hwy 87 on the Bolivar Peninsula. Street flooding around FM 518 and I-45.								
Trinity County Groveton	01 02	2235CST 0100CST			0 0	3K	Flash Flood	
Flooding on some county roads in and around Groveton.								
Fort Bend County 2 SW Kendleton	02	1108CST			0 0		Funnel Cloud	
Funnel cloud reported at Hwy 59 and Lum Road.								
Galveston County League City	02	1124CST			0 0		Funnel Cloud	
Funnel cloud reported between Egret Bay and League City.								
Waller County 2 S Waller	02	1244CST			0 0		Funnel Cloud	
Funnel cloud 2 miles south of Waller or 5 miles west of Hockley moving northeast.								

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

TEXAS, Central Southeast

Washington County Chappell Hill	02	1254CST			0	0			Funnel Cloud
			Funnel cloud in Chappell Hill near Brenham off Hwy 290.						
Fort Bend County 10 W Rosenberg	01	1525CST			0	0			Funnel Cloud
			Funnel cloud along Hwy 90 between Rosenberg and East Bernard.						
Harris County 5 NW Hockley	01	1605CST			0	0			Funnel Cloud
			Funnel cloud reported at Hwy 290 and FM 2920.						
Harris County Jersey Village	01	1605CST			0	0			Funnel Cloud
			Funnel cloud reported near Jersey Village.						
Harris County Katy	01	1605CST			0	0			Funnel Cloud
			Funnel cloud reported near Katy.						
Harris County Houston	01	1710CST			0	0			Funnel Cloud
			Funnel cloud reported at intersection of Westheimer and Addicks.						
Harris County 4 NW Missouri City	01	1755CST			0	0			Funnel Cloud
			Two funnel clouds reported outside of Missouri City.						
Walker County 2 SW Crabbs Prairie	02	0530CST 0655CST			0	0	3K		Flash Flood
			Water flowing over FM 2550 1 mile south of FM 1696. High water in and around Huntsville.						
Brazoria County Lake Jackson	04	1416CST 1605CST			0	0	10K		Flash Flood
			Bumper-high street flooding. Water threatening homes in the Winding Woods subdivision.						
Harris County Jersey Village	04	1651CST	0.2	30	0	0			Tornado (F0)
			Tornado in Eldridge Parkway near Jersey Village. No damage reported						
Galveston County Crystal Beach	10	1540CST			1	1			Lightning
			Two men struck by lightning, one fatality. M?OT						
Fort Bend County 7 N Rosenberg	11	1320CST			1	0			Lightning
			Lightning strike, 1 fatality. Landscaper sought refuge under tree near the Pecan Grove subdivision. M36UT						
Fort Bend County Needville	12	0118CST			0	0	2K		Thunderstorm Wind (G57)
			Strong wind gusts downed some trees.						
Matagorda County Wadsworth	14	1325CST			0	0			Funnel Cloud
			Funnel cloud reported near the intersection of FM 521 and Hwy 60.						

TEXAS, Extreme West

NONE REPORTED.

TEXAS, Mid - South

Bee County 2 NE Tynan	09	1350CST			0	0			Thunderstorm Wind (G50)
			15 power poles blown down along Highway 359. Dime size hail was also reported.						
Live Oak County Oakville	11	1930CST 2100CST			0	0			Flash Flood
			A nearly stationary thunderstorm produced localized 6 to 8 inches of rain in 3 hours near Oakville along Interstate 37. The frontage road of I-37 around Sulphur Creek. had water over the road.						

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
TEXAS, Mid - South									
San Patricio County Ingleside	12	0312CST			0	0			Thunderstorm Wind (G72)
	Damage was done to a crane on a barge along the Intracoastal Waterway. See Gulf of Mexico Marine Zone 230 above for more information.								
San Patricio County Mathis	12	0345CST 0530CST			0	0			Flash Flood
	Water over the road along S.R. 188 off of I-37. In addition San Patricio Sheriff's office reported 26 in Mathis had water over the road. Several other roads through the county were reported as having minor flooding, but passable.								
Nueces County Corpus Christi	12	0400CST 0600CST			0	0			Flash Flood
	Corpus Christi Police Depatment reported water covering I-37, 1 mile west of Highway 358. In addition several city streets had water covering portions of the roadway.								
Nueces County Port Aransas	12	0400CST 0500CST			0	0			Thunderstorm Wind (G60)
	A small security building to a condominium complex received major damage. Minor roof damage also occurred at an apartment complex, several homes and a nightclub. Power lines were also blown down.								
	A squall line moved out of South-Central Texas and into the Coastal Bend and Rio Grande Plains during the early morning hours of the 12th. A rear inflow jet descended across eastern San Patricio and Nueces counties producing a bow echo right at the coastline and resulting in damaging surface winds around Ingleside and Port Aransas. In addition very heavy rainfall fell across San Patricio and Nueces counties. 4.69 inches of rain fell at the Corpus Christi International Airport during the morning, setting a new record for daily rainfall on that date. The squall line continued into the Gulf of Mexico producing wind gusts up to 77 mph at the RTNS platform.								
San Patricio County 1 NW Gregory	14	0913CST			0	0			Funnel Cloud
San Patricio County 1 S Edroy	14	0937CST	0.3	30	0	0			Tornado (F0)
	NWS Storm Survey concluded a F0 tornado briefly touched down just south of Edroy, knocked down several power poles and damaged a 500-foot long tin cattle shade as it moved northwest.								
Nueces County Corpus Christi	17	1620CST 1745CST			0	0			Flash Flood
	Very heavy rainfall over city of Corpus Christi produced water over the road at Rand Morgan Road and also near the West Campus Del Mar College. Minor, nuisance street flooding occurred across numerous other city streets.								
Bee County Central Portion	18	1335CST 1530CST			0	0			Flash Flood
	Heavy rainfall fell across Central Bee county producing flash flooding along Hwy 59, 888 and 202 near Beeville.								
Goliad County North Central Portion	18	1340CST 1530CST			0	0			Flash Flood
	Heavy rainfall across Goliad County produced flash flooding along Hwy 1726 and along Hwy 622.								
Refugio County Refugio	18	1340CST 1500CST			0	0			Flash Flood
	Heavy rainfall resulted in several streets flooded in the city of Refugio.								
San Patricio County Aransas Pass	18	1520CST 1730CST			0	0			Flash Flood
	Heavy rainfall produced widespread street flooding in Aransas Pass.								

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
<u>TEXAS, Mid - South</u>									
Nueces County Countywide	18	1532CST 1800CST			0	0			Flash Flood
Heavy rainfall produced widepread street flooding in Corpus Christi. Very heay rainfall fell in southern Nueces County in the city of Bishop. 4 to 5 inches of rainfall were reported in Bishop.									
Kleberg County Central Portion	18	1636CST 1730CST			0	0			Flash Flood
Flooding along FM 772 and East CR 1040.									
TXZ232		Bee 18 1700CST 19 0215CST			0	0			Flood
Heavy rainfall on the 17th through the 19th led to river flooding: The Aransas River near Skidmore crested at 16.94 feet on the 19th. (flood stage 13 feet)									
TXZ234		Victoria 19 0330CST 21 2115CST			0	0			Flood
Heavy rainfall over South Texas on the 17th through the 19th led to river flooding. The Guadalupe River at Dupont crested at 20.99 feet on the 19th. (flood stage 20 feet)									
TXZ243		Nueces 19 0545CST 25 0945CST			0	0			Flood
Heavy rainfall over South Texas on the 17th through the 19th led to river flooding. The Nueces River at Bluntzer crested at 24.19 feet on the 23rd. (flood stage 18 feet)									
TXZ231		Live Oak 20 0000CST 21 1700CST			0	0			Flood
Heavy rainfall over South Texas on the 17th through the 19th led to river flooding. The Atascosa River near Whitsett crested at 26.40 feet on the 21st. (flood stage 20 feet)									
TXZ243		Nueces 23 0545CST 25 2015CST			0	0			Flood
Heavy rainfall over South Texas on the 17th through the 19th led to river flooding. The Nueces River at Calallen crested at 7.27 feet on the 25th. (flood stage 7 feet)									
<u>TEXAS, North</u>									
Leon County 7 S Buffalo	04	1920CST			0	0			Thunderstorm Wind (G52)
Young County Graham	11	0744CST 1044CST			0	0			Flash Flood
Rainfal up to 4.12 inches resulted in street flooding across Graham.l									
Jack County Jacksboro	11	1024CST 1324CST			0	0			Heavy Rain
Heavy rains of up to 4 inches caused minor street flooding in town, closing some streets for a few hours.									
Parker County Peaster	11	1237CST 1537CST			0	0			Flash Flood
Flash flooding occurred at Highway 920 and Dry Creek.									
Tarrant County North Richland Hills	11	1305CST 1405CST			0	0			Flash Flood
Intersection of Precinct Line Road and Kirk Street barricaded.									

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
TEXAS, North									
Parker County Millsap	11	1315CST 1415CST			0	0			Flash Flood
Flash flooding reported by a mail courier.									
Tarrant County Ft Worth	11	1505CST 1605CST			0	0			Flash Flood
There was a high water rescue in south Ft. Worth.									
Dallas County Dallas	18	1554CST 1654CST			0	0			Flash Flood
Interstate 635 closed at Interstate 75 due to flooding in North Dallas.									
Mclennan County China Spg	18	1711CST 1811CST			0	0			Flash Flood
The DPS reported flash flooding.									
Tarrant County Ft Worth	18	1847CST 1947CST			0	0			Flash Flood
Water was reported one foot deep on Hulen Street in southwest Ft. Worth.									
Tarrant County Mansfield	18	1900CST 2200CST			0	0	10K		Flash Flood
4.7 inches fell in three hours causing flooding in low lying areas and closing some streets.									
Hamilton County Hico	18	1925CST 2025CST			0	0			Flash Flood
Sheriff's office reported four to five inches of rain with flooding in Hico, and on FM 1602 near Highway 281.									
Hood County Granbury	18	2000CST 2300CST			0	0	15K		Flash Flood
Numerous roads were closed as heavy rain up to 5.75 inches fell across the county.									
Hood County Tolar	18	2106CST 2206CST			0	0	10K		Flash Flood
Several homes were flooded in Tolar.									
TEXAS, North Panhandle									
Hartley County 2 E Channing	07	1530CST			0	0			Hail (1.00)
Moore County 2 W Four Way	07	1600CST			0	0			Hail (1.00)
Moore County 3 S Bautista Station	07	1635CST 1800CST			0	0			Flash Flood
Extensive flooding reported on State Highway 354 and Farm to Market Road 2202.									
Moore County Dumas	07	2031CST 2200CST			0	0			Flash Flood
Flash flooding reported in the town of Dumas on the east side.									
Severe thunderstorms produced hail and flash flooding across the central sections of the Texas panhandle during the early evening hours. Severe thunderstorms also produced hail across the northwestern Texas panhandle during the late afternoon hours									
Hartley County 1 S Channing	09	1520CST			0	0			Hail (1.00)
Hartley County Channing	09	1520CST			0	0			Hail (0.75)
Hartley County Channing	09	1530CST			0	0			Hail (0.75)
Hartley County Channing	09	1531CST			0	0			Hail (0.75)
Hartley County 2 N Channing	09	1545CST			0	0			Hail (0.88)

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
TEXAS, North Panhandle									
Hartley County 5 SE Dalhart	09	1625CST			0	0			Hail (1.00)
Oldham County Vega	09	1629CST			0	0			Hail (0.88)
Oldham County Vega	09	1640CST			0	0			Hail (0.75)
Hartley County Channing	09	1700CST			0	0			Hail (0.88)
Hartley County 1 S Channing	09	1719CST 1745CST			0	0	5K		Thunderstorm Wind (G52)
An electrical transmission line was reported blown down by the high winds causing two hundred and seventy-two homes in the town of Channing to be without power.									
Hartley County Channing	09	1725CST			0	0			Hail (1.00)
Hartley County Channing	09	1730CST			0	0			Hail (1.75)
Hartley County Channing	09	1730CST			0	0			Thunderstorm Wind (G52)
Hartley County 2 E Channing	09	1800CST 1900CST			0	0		15K	Flash Flood
Extensive flooding to fields reported along State Highway 354.									
Oldham County 3 SE Boys Ranch	09	1830CST 1930CST			0	0			Flash Flood
Extensive flooding of bar ditches three to four feet deep along Farm to Market Road 1061.									
Hartley County (Dht)Dalhart Muni Ar	09	2022CST			0	0			Thunderstorm Wind (G54)
Hartley County 2 E Channing	09	2032CST			0	0			Hail (1.00)
Hartley County 2 E Channing	09	2032CST			0	0			Thunderstorm Wind (G52)
Severe thunderstorms plagued the western and northwestern sections of the Texas panhandle with large hail...damaging winds and flash flooding from the late afternoon hours until into the evening hours.									
Lipscomb County Booker	10	1543CST			0	0			Hail (0.88)
Ochiltree County 8 NE Twichell	10	1545CST			0	0			Thunderstorm Wind (G52)
Ochiltree County 8 NE Twichell	10	1640CST			0	0			Hail (0.75)
Wheeler County 7 E Kellerville	10	1755CST			0	0			Hail (0.88)
Collingsworth County 2 W Dozier	10	1840CST			0	0			Thunderstorm Wind (G56)
Trees were reported blown over by the high winds.									
Collingsworth County 7 NW Dozier	10	1846CST			0	0			Hail (1.00)
Wheeler County 2 S Lela	10	1846CST			0	0			Hail (1.00)
Donley County 3 SW Howardwick	10	2050CST			0	0			Hail (0.75)
Wheeler County Twitty	10	2115CST 2215CST			0	0			Flash Flood
Water was reported over the roadway along U.S. Highway 83.									
Gray County 8 W Mc Lean	10 11	2121CST 0200CST			0	0			Flash Flood
Flash flooding of the underpass was reported of Interstate 40 at mile marker 136.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

TEXAS, North Panhandle

Wheeler County

Shamrock

10 2300CST

0

0

Flash Flood

11 0200CST

Flash flooding reported in the town of Shamrock where a two mile stretch of U.S. Highway 66 was underwater and numerous streets were completely underwater.

Donley County

Clarendon

10 2355CST

0

0

Flash Flood

11 0300CST

Water was reported covering U.S. Highway 287 in the town of Clarendon.

Severe thunderstorms produced large hail...high winds...and flash flooding across the eastern sections of the Texas panhandle during the afternoon and into the overnight hours. Except for some trees blown down by the high winds over the extreme southeastern Texas panhandle...no damage was reported. Also...no injuries were reported.

TEXAS, Northeast

NONE REPORTED.

TEXAS, South

NOT RECEIVED.

TEXAS, South Central

Atascosa County

South Portion

02 0730CST

0

0

5K

Flash Flood

0900CST

Following showers that fell generally across South Central Texas on September 1, additional storms developed on the morning of September 2 from Charlotte to Campbellton to Fashing. Rainfall over the southern part of Atascosa County varied from 1 to 2 inches, with isolated totals to near 4 inches. Damage was limited to roads near low water crossings.

Lavaca County

North Portion

02 0800CST

0

0

5K

Flash Flood

1000CST

Rainfall on September 1 had already saturated the soils over Lavaca and DeWitt Counties. Widespread showers and thunderstorms redeveloped on the morning of September 2, producing an additional 1 to 2 inches of rain, with isolated totals to 4 inches, across the northern parts of DeWitt and Lavaca Counties north of a line from Yorktown to Cuero to Yoakum to Shiner to Hallettsville. Damage was limited to roads near low water crossings.

De Witt County

North Portion

02 0815CST

0

0

5K

Flash Flood

0945CST

Rainfall on September 1 had already saturated the soils over Lavaca and DeWitt Counties. Widespread showers and thunderstorms redeveloped on the morning of September 2, producing an additional 1 to 2 inches of rain, with isolated totals to 4 inches, across the northern parts of DeWitt and Lavaca Counties north of a line from Yorktown to Cuero to Yoakum to Shiner to Hallettsville. Damage was limited to roads near low water crossings.

Atascosa County

South Portion

03 1130CST

0

0

10K

Flash Flood

1300CST

After the soaking rains of September 1 and 2, soils over Atascosa, DeWitt and Lavaca Counties were generally saturated. As additional rainfall developed in the late morning of September 3, flash flooding developed very quickly and continued into the mid afternoon. This time the heaviest rainfall was over the southern parts of Atascosa and DeWitt Counties and over the western part of Lavaca County, where general 1 inch rainfall was reported with isolated totals to 3 inches in Atascosa and Lavaca Counties and 4 inches in DeWitt County. Flash flooding spread across all of the 3 counties. Damage was reported only to roads and bridges.

Lavaca County

Countywide

03 1230CST

0

0

10K

Flash Flood

1430CST

After the soaking rains of September 1 and 2, soils over Atascosa, DeWitt and Lavaca Counties were generally saturated. As additional rainfall developed in the late morning of September 3, flash flooding developed very quickly and continued into the mid afternoon. This time the heaviest rainfall was over the southern parts of Atascosa and DeWitt Counties and over the western part of Lavaca County, where general 1 inch rainfall was reported with isolated totals to 3 inches in Atascosa and Lavaca Counties and 4 inches in DeWitt County. Flash flooding spread across all of the 3 counties. Damage was reported only to roads and bridges.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property Damage	Crops	Character of Storm
TEXAS, South Central									
De Witt County Countywide	03	1300CST 1500CST			0	0	10K		Flash Flood
After the soaking rains of September 1 and 2, soils over Atascosa, DeWitt and Lavaca Counties were generally saturated. As additional rainfall developed in the late morning of September 3, flash flooding developed very quickly and continued into the mid afternoon. This time the heaviest rainfall was over the southern parts of Atascosa and DeWitt Counties and over the western part of Lavaca County, where general 1 inch rainfall was reported with isolated totals to 3 inches in Atascosa and Lavaca Counties and 4 inches in DeWitt County. Flash flooding spread across all of the 3 counties. Damage was reported only to roads and bridges.									
Bexar County Countywide	05	1230CST 1430CST			0	0	100K		Flash Flood
After several days of widespread general showers, soils were generally saturated across South Central Texas. On September 5, additional rainfall developed from the southern part of Bandera County across the Bexar and Atascosa Counties and into the western part of Wilson County. Repeated showers and thunderstorms produced general rainfall over Bexar County of 1 to 2 inches, with isolated totals of up to 4 inches. San Antonio reported numerous road closures and high water rescues from vehicles. Damage was limited to roads, bridges, and vehicles.									
Bandera County South Portion	05	1400CST 1630CST			0	0	10K		Flash Flood
After several days of widespread general showers, soils were generally saturated across South Central Texas. On September 5, additional rainfall developed from the southern part of Bandera County across the Bexar and Atascosa Counties and into the western part of Wilson County. Repeated showers and thunderstorms produced general rainfall of 1 to 2 inches over the southern part of the county, with isolated totals of up to 4 inches in the southwest part. Damage was limited to roads and bridges									
Atascosa County Countywide	05	1500CST 1700CST			0	0	10K		Flash Flood
After several days of widespread general showers, soils were generally saturated across South Central Texas. On September 5, additional rainfall developed from the southern part of Bandera County across the Bexar and Atascosa Counties and into the western part of Wilson County. Repeated showers and thunderstorms produced general rainfall over county of around 1 inch, with isolated totals of up to 4 inches in the south part of the county. Damage was limited to roads and bridges.									
Wilson County West Portion	05	1530CST 1700CST			0	0	10K		Flash Flood
After several days of widespread general showers, soils were generally saturated across South Central Texas. On September 5, additional rainfall developed from the southern part of Bandera County across the Bexar and Atascosa Counties and into the western part of Wilson County. Repeated showers and thunderstorms produced general rainfall around 1 inch in the western part of the county, with isolated totals of up to 4 inches. Damage was limited to roads and bridges									
Llano County 3 W Buchanan Dam	11	1635CST 1655CST			0	0	50K		Thunderstorm Wind (G60)
Severe thunderstorms winds estimated at 60 knots blew down power lines in eastern Llano County.									
Llano County East Portion	11	1700CST 1900CST			0	0	3K		Flash Flood
Late on September 11, in advance of an upper level disturbance approaching from the west, a line of thunderstorms formed west of Llano and moved through the county. Storms produced a general 1 to 2 inch rainfall with isolated totals to near 4 inches northwest of Llano. Lower Colorado River Authority personnel reported creeks out of banks in the eastern part of the county as a result of the heavy rainfall.									
Hays County South Portion	11	2130CST 2230CST			0	0	3K		Flash Flood
Late on September 11, the line of showers and thunderstorms that had formed over the Hill Country moved into the IH35 corridor. Heavy rain fell briefly from the southern part of Hays County across much of Comal County. The storm line produced a countywide 1 inch rain, with 2 inches near San Marcos. Brief flash flooding was reported in San Marcos with damage limited to streets and roads.									

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

TEXAS, South Central

Comal County

East Portion

11 2200CST
2300CST 0 0 5K Flash Flood

Late on September 11, the line of showers and thunderstorms that had formed over the Hill Country moved into the IH35 corridor. Heavy rain fell briefly from the southern part of Hays County across much of Comal County. The line of storms produced a general lynch rainfall, with 3 inches just west of New Braunfels. Brief flash flooding was reported across New Braunfels as streets became flooded and barricades were put up across the low water crossings. Damage was reported to streets and roads.

Val Verde County

Del Rio

11 2212CST
2230CST 0 0 20K Thunderstorm Wind (G60)

The Val Verde County Sheriff's Department reported power lines blown down by severe thunderstorm winds estimated at 60 knots in the southern part of Del Rio.

TEXAS, South Panhandle

TXZ021>044

Parmer - Castro - Swisher - Briscoe - Hall - Childress - Bailey - Lamb - Hale - Floyd - Motley - Cottle - Cochran - Hockley - Lubbock - Crosby - Dickens - King - Yoakum - Terry - Lynn - Garza - Kent - Stonewall
01 0000CST 0 0
30 2300CST Drought

The long-term drought that redeveloped across the South Plains, extreme southern Panhandle, and Rolling Plains in July continued through September. A few areas received beneficial rainfall from isolated thunderstorms that developed during the month but on average the region experienced another abnormally dry month. The NWS cooperative observing stations across the South Plains region measured average rainfall amounts that were almost two inches below normal for the month. Thus, dry soil moisture conditions persisted through September and crops, especially the dryland crops, continued to suffer.

More details, including rough estimates of crop damage, will be included in later months after the extent of the drought is better determined.

Hockley County

3 W Whitharral

07 1640CST 0 0 150K Hail (1.00)

Hockley County

1 E Sundown to 2 E Sundown

07 1725CST
1730CST 0 0 1.5M Hail (2.50)

Hail up to tennis ball size severely damaged nearly 8000 acres of cotton and 1000 acres of peanuts.

Hockley County

1 E Sundown to 2 E Sundown

07 1725CST 0 0 200K Thunderstorm Wind (G70)

Strong thunderstorm wind estimated at around 80 mph caused major damage to the roof of a petroleum plant.

Hockley County

Sundown

07 1800CST 0 0 25K Thunderstorm Wind (G57)

Strong thunderstorm wind blew down power lines and snapped power poles on Farm-to-Market Road 301 near town. A roof of a building at the golf course was damaged.

Bailey County

Needmore

07 1832CST 0 0 100K 1M Hail (2.75)

Storm spotters affiliated with the Muleshoe PD reported baseball size hail.

Terry County

Brownfield

07 1850CST 0 0 Thunderstorm Wind (G61)

Strong thunderstorm wind caused roof damage and blew down power lines in town.

Lynn County

New Moore

07 1930CST 0 0 75K 1M Hail (1.75)

Golfball size hail damaged vehicles and destroyed crops.

Terry County

Brownfield

07 2053CST 0 0 4M Hail (1.75)

Hail up to golfball size severely damaged an estimated 30,000 acres of cotton.

Yoakum County

8 E Plains

09 1619CST 0 0 100K Hail (1.00)

Yoakum County

8 E Plains

09 1625CST 0 0 250K Hail (1.75)

The Yoakum County Sheriff's Office reported golfball size hail.

Terry County

Tokio

09 1627CST 0 0 350K Hail (1.00)

Hail destroyed an estimated 2500 acres of cotton in western Terry County.

Terry County

12 W Brownfield

09 1655CST 0 0 200K Hail (1.00)

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>TEXAS, South Panhandle</u>									
Terry County 7 N Wellman	09	1708CST			0	0		150K	Hail (0.88)
<u>TEXAS, Southeast</u>									
Jefferson County Countywide	12	0700CST 1100CST			0	0	25K		Flash Flood
Orange County Countywide	12	0700CST 1100CST			0	0	25K		Flash Flood
As much as six to seven inches of rain fell in less than six hours, resulting in flooding of area roads in Jefferson and Orange Counties. Bridge City and Vidor were among the locations in Orange County where roads were closed off due to floodwaters.									
<u>TEXAS, West</u>									
Andrews County 6 E Andrews	07	1610CST			0	0	0	0	Hail (0.75)
Reported on State Route 176.									
Andrews County 7 E Andrews to 9 E Andrews	07	1610CST 1615CST			0	0	20K	0	Thunderstorm Wind (G65)
At least five power poles were blown down by severe thunderstorm winds along State Route 176 near the intersection of Farm to Market Road 1788.									
The first of four supercell thunderstorms to affect the northern Permian Basin during the evening of the 7th and the early morning hours of the 8th developed over Andrews County. This storm resulted in large hail and damaging thunderstorm winds. The storm then propagated southeast across unpopulated areas of southwest Martin County, and eventually across Midland (including the city of Midland proper) and northern Upton Counties.									
Midland County Midland to 5 SE Midland	07	1705CST 1754CST			0	0	5K	0	Thunderstorm Wind (G57)
Severe thunderstorm wind gusts estimated at 65 MPH affected the Midland vicinity. Multiple reports of similar winds were received. These winds destroyed a storage shed along Highway 158 southeast of the city.									
Midland County Midland to 5 SE Midland	07	1715CST 1748CST			0	0	0	0	Hail (1.00)
Multiple reports of penny to quarter size hail were received from the Midland vicinity.									
Midland County Midland	07	1735CST 1900CST			0	0	15K	0	Flash Flood
Reports indicated several cars stalled in flash flood waters on Loop 250 at Fairgrounds Road. No injuries were reported.									
Midland County Greenwood	07	1750CST 1930CST			0	0	0	0	Flash Flood
Local officials reported flash flooding that resulted in high water covering city streets in Greenwood.									
Midland County Greenwood	07	1750CST			0	0	0	0	Hail (1.00)
Upton County Midkiff	07	1930CST			0	0	8K	0	Thunderstorm Wind (G61)
Thunderstorm winds blew large trees and power lines down in the city of Midkiff.									
Dawson County 14 NNE Lamesa to 5 ENE Arvana	07	2020CST 2050CST			0	0	250K	3.7M	Hail (1.75)
The second supercell thunderstorm to affect the Permian Basin this day resulted in a swath of large hail that damaged property and destroyed cotton and sorghum crops across northeast Dawson County. Hailstones ranging in size from pennies to golfballs fell along U.S. Highway 87 north-northeast of Lamesa. Large hail covered the ground northeast and east of Arvana, also ranging in size from pennies to golfballs. NWS meteorologists interviewed local residents the following day. Several residents indicated the hail fell at their locations for up to twenty minutes. The combination of damage surveys and interviews with local agricultural officials indicated over 3.7 million dollars worth of damage to cotton and surghum crops. In addition, house roofs, vehicles, and windows were damaged by the hail.									
Dawson County 2 E Arvana	07	2023CST			0	0	0	0	Hail (2.75)
Baseball size hail was reported along Farm to Market Road 2411 east of Arvana. This very large hail was observed in association with the destructive hail swath listed above. Damage estimates indicated in the previous listing reflect those associated with this report in addition to the numerous reports of relatively smaller hail along entire the damage path.									

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
TEXAS, West									
Dawson County									
East Portion	07	2114CST			0	0	15K	0	Flash Flood
	08	0200CST							
High water resulting from flash flooding was widespread across eastern Dawson County late on the 7th and into the early morning hours of the 8th. As the supercell storm tracked southeast across the area, vehicles were stalled in high water on U.S. Highway 87 twelve miles north of Lamesa. Farm to Market Road 178 was also impassable three miles north of Key.									
Dawson County									
2 NE Sand to 6 S Sand	07	2200CST			0	0	150K	1.9M	Hail (1.75)
		2235CST							
The evening's third supercell to affect the northern Permian Basin (the second supercell in Dawson County) resulted in up to golfball size hail that broke windows, caused roof damage, and damaged vehicles at rural residences in the vicinity of Sand. This storm also resulted in the destruction of local cotton and surgham crops. Post storm surveys and interviews suggest an additional 1.9 million dollars worth of agricultural damage occurred. Several area residents reported the duration of large hail at their locations to range from twenty-five to thirty minutes.									
Dawson County									
Sand	07	2230CST			0	0	0	0	Flash Flood
	08	0300CST							
The supercell thunderstorm over western Dawson County resulted in flash flooding. U.S. Highway 180 was closed west of Lamesa due to flowing high water. In addition, many rural roads near Sand were impassable. No injuries were reported.									
Martin County									
13 NW Tarzan	07	2235CST			0	0	0	0	Hail (1.75)
As the evening's third supercell storm propagated south-southeast out of Dawson County and into northern Martin County, large hail up to the size of golfballs covered Highway 349. The Texas Department of Transportation temporarily closed a section of the highway due to drifted hail.									
Gaines County									
20 SE Seminole	07	2350CST			0	0	0	0	Hail (0.75)
		2355CST							
The fourth supercell thunderstorm to develop over the northern Permian Basin this evening initiated over eastern Gaines County. This storm resulted in penny size hail over rural parts of the county southeast of Seminole before moving into Andrews County.									
Andrews County									
16 E Andrews to 20 E Andrews	08	0020CST			0	0	75K	0	Thunderstorm Wind (G70)
		0035CST							
Severe thunderstorm winds blew down at least 15 power poles along Highway 176 east of Andrews to near the Martin County line as the supercell storm moved across eastern Andrews County.									
Andrews County									
20 E Andrews	08	0025CST			0	0	0	0	Hail (1.00)
		0035CST							
Large hailstones ranging in size from dimes to quarters covered the ground and stripped the leaves from trees at a rural residence on the Andrews/Martin County line just off of Highway 176.									
Martin County									
13 W Tarzan	08	0025CST			0	0	0	0	Hail (1.00)
		0035CST							
Large hailstones ranging in size from dimes to quarters covered the ground and stripped the leaves from trees at a rural residence on the Andrews/Martin County line just off of Highway 176.									
Martin County									
15 SW Tarzan	08	0050CST	0.2	100	0	0	0	0	Tornado (F0)
		0051CST							
As the supercell storm moved from eastern Andrews County into western Martin County a local television meteorologist who was in the field storm spotting, and a WFO Midland staff meteorologist who was looking north from the office, observed a tornado. The tornado was located in rural areas of southwest Martin County, approximately three miles west of Highway 349 and eight miles south-southwest of the intersection of Highways 349 and 176.									
Martin County									
12 SW Tarzan	08	0104CST			0	0	0	0	Hail (1.75)
Hail to the size of golfballs accumulated three feet deep on Highway 349. The Texas Department of Transportation in Martin County was called out for the second time this night to close parts of that highway due to hail. Parts of Highway 349 remained closed due to high hail drifts for at least nine hours.									

Storm Data and Unusual Weather Phenomena

September 2003

September 2003									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
TEXAS, West									
Martin County 13 W Tarzan to 13 SW Tarzan	08	0105CST 0110CST			0	0	120K	0	Thunderstorm Wind (G78)
<p>The storm which produced the tornado quickly evolved from a classic supercell structure to a high precipitation supercell as the occlusion process occurred. This transition resulted in a broad swath of very strong and damaging southwest to west winds which crossed Highway 349. The most intense damage occurred along the stretch of Highway 349 from the intersection with 176 to about 6 miles south of that intersection. This damage correlated with a strong low level divergent pattern in radar velocity products, indicative of an intense downburst in the forward flank downdraft of the storm. These winds blew down numerous power poles (up to twenty-five) from the intersection of Highways 349 and 176, south to ten miles south of that intersection. One metal light pole, which was snapped at the base, was rated to withstand 80 MPH winds.</p> <p>A series of four supercell thunderstorms moved southeast across the northern Permian Basin during the late afternoon and evening of the 7th, and the early morning hours of the 8th. These storm produced devastating large hail, damaging winds, flash flooding, and a tornado. In addition to property damage, large hail resulted in the widespread destruction of area agricultural crops.</p>									
Midland County 20 S Midland	08	1910CST			0	0	0	0	Hail (0.75)
<p>Reported on Highway 349.</p>									
Midland County 15 S Midland	08	1930CST 2045CST			0	0	0	0	Flash Flood
<p>Law enforcement officials reported high water flowing across Highway 349 and other rural roadways in southern Midland County. An isolated supercell storm developed over southern Midland County and moved south into northern Upton County during the evening hours of the 8th. This storm developed near the intersection of an outflow boundary and a dryline. The storm initially split, with the northern (left moving) member weakening and the southern (right moving) cell becoming severe with large hail and flash flooding. The storm remained over sparsely populated areas, and documented reports are not likely representative of the storm's severity.</p>									
Pecos County 24 SSW Bakersfield	10	1625CST			0	0	0	0	Thunderstorm Wind (G57)
<p>Large limbs measuring "several inches" in diameter were broken off of trees at a rural residence in far southeast Pecos County by severe thunderstorm winds.</p>									
Scurry County 2 W Knapp	10	1937CST 1950CST			0	0	10K	250K	Hail (2.75)
<p>Two reports were received of baseball size hail along Farm to Market Road 1610 west of Knapp. The local newspaper editor reported windows knocked out of rural homes by the large hail stones. Several second hand reports of crop damage were received, but local authorities said the damage was very isolated in nature. Roof and vehicle damage also resulted.</p>									
Mitchell County Colorado City to 4 WSW Colorado City	10	1955CST 2007CST			0	0	0	0	Hail (1.75)
<p>Golfball hail was reported in the Colorado City vicinity.</p> <p>Severe thunderstorms resulted in very large hail and damaging winds across parts of West Texas during the afternoon and evening of the 10th. The hardest hit areas included the northeast Permian Basin, where hail as large as baseballs was reported. Despite multiple reports of very large hail, no reports of significant damage to property or agricultural crops were reported.</p>									
Jeff Davis County 9 NW Ft Davis	11	1745CST 1750CST			0	0	0	0	Thunderstorm Wind (G74)
<p>Severe thunderstorm wind gusts were recorded by an automated observing system at the McDonald Observatory on Mount Locke. A gust of 85 MPH was recorded at 1745 CST and a gust of 82 MPH was recorded at 1750 CST. The observatory staff reported no damage from the storm which was also accompanied by large hail.</p>									
Jeff Davis County 9 NW Ft Davis	11	1750CST			0	0	0	0	Hail (1.00)
<p>Penny to quarter size hail covered the ground at the McDonald Observatory on Mount Locke.</p>									
Jeff Davis County Ft Davis	11	1801CST			0	0	0	0	Hail (1.75)
<p>Large hail ranging from quarter to golfball size covered the ground in Fort Davis.</p>									
Brewster County 5 ENE Alpine to 7 ENE Alpine	11	1834CST 1842CST			0	0	0	0	Hail (1.75)
<p>Nickel to golfball size hail was reported near the intersection of Highways 67 and 90</p> <p>Severe thunderstorms developed in the vicinity of the Davis Mountains on the 11th. A few storms became severe resulting in very strong thunderstorm winds over 80 MPH and large hail up to the size of golfballs. No significant damage was reported</p>									

Storm Data and Unusual Weather Phenomena

September 2003

									September 2003
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
TEXAS, West									
Upton County 1 E Midkiff	13	2325CST			0	0	0	0	Flash Flood
	14	0130CST							
Law officials reported flash flooding resulting in high water flowing over Farm to Market Road 2401 just east of Midkiff.									
Reagan County 10 NW Texon	14	0023CST			0	0	0	0	Hail (1.75)
	Reported at a rural gas plant on the Upton/Reagan County line just off of Farm to Market Road 1555.								
Upton County 14 NE Rankin	14	0023CST			0	0	0	0	Hail (1.75)
	Reported at a rural gas plant on the Upton/Reagan County line just off of Farm to Market Road 1555.								
Reagan County 20 N Big Lake	14	0030CST			0	0	0	0	Flash Flood
		0145CST							
Flash flooding resulted in Highway 137 being inundated by high water, resulting in the highway becoming impassable.									
Pecos County 6 S Iraan	14	0626CST			0	0	0	0	Flash Flood
		0945CST							
Law enforcement officials reported up to eight inches of high water flowing over Highway 349 as a result of flash flooding. Severe thunderstorms, including an isolated supercell over Upton and Reagan Counties, developed along and just north of an advancing cold front during the overnight hours and early morning hours of the 13th and 14th. These storms resulted in large hail up to the size of golfballs and flash flooding.									
Pecos County 3 N Coyanosa	25	0515CST			0	0	0	0	Flash Flood
		0730CST							
The intersection of Farm to Market Roads 1776 and 1450 was closed due to high water.									
Midland County Midland	25	0845CST			0	0	0	0	Flash Flood
		1100CST							
Flash flooding resulted two to three feet of water in some city streets. Motorists reported high water up the hoods of cars. No reports of disabled vehicles were receive, and there were no injuries.									
Upton County North Portion	25	0915CST			0	0	0	0	Flash Flood
		1130CST							
Heavy rainfall resulted in flash flooding of several highways across the northern parts of Upton County. Highway 329 was closed due to high water nineteen miles northwest of Rankin. High water in Nine Mile Draw flooded Highway 349 nine miles north of Rankin. Flash flooding was also reported in the city streets of Midkiff at 09:55 CST.									
Reagan County 36 NW Big Lake	25	1007CST			0	0	0	0	Flash Flood
		1200CST							
Flash flooding resulted in high water flowing over Farm to Market Road 2401.									
Howard County Big Spring	25	1130CST			0	0	50K	0	Flash Flood
		1330CST							
Flash flooding in the city streets of Big Spring resulted in a dangerous situation for motorists. Local authorities reported "numerous" vehicles stalled in up to three feet of flowing water in city streets. Rescue workers removed several people from vehicles which were submerged up to the windshields in the flood waters. No injuries were reported.									

Storm Data and Unusual Weather Phenomena

September 2003

									September 2003	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
<u>TEXAS, West</u>										
Mitchell County										
Colorado City to	25	1250CST	1	30	0	0	250K	0		Tornado (F1)
1 W Colorado City		1255CST								
A tornado developed along Farm to Market Road 1983 just west of Colorado City, approximately one half mile south of Interstate Business 20. The tornado initially moved northwest, and produced light damage to two mobile homes along 1983. An eyewitness who observed the tornado during its early stages described the tornado as a tall and narrow vortex which lofted debris approximately 200 feet into the air.										
The tornado began moving west along Interstate Business 20. Part of the roof was blown off of the KVCM-KAUM Radio station. The tornado then strengthened as it moved through a rural residential neighborhood immediately south of Business 20. A house west of the radio station lost part of its roof, a car port, and a storage barn. Two campers were destroyed at this residence, with one being deposited southeast of its original location. Utility poles and trees were also damaged.										
F1 damage was sustained to the next house along the path to the west. Tornadic winds damaged the garage door of this well built home on the northeast corner of the structure. After the garage door was compromised, high speed winds (estimated between 90 and 100 MPH) entered the remainder of the structure, and the roof blew off. Large pieces of roof debris knocked down utility poles, damaged large trees, and moved vehicles located downwind of the house. The adjacent house to the west was also sustained damage from flying debris.										
A home owner two houses further west observed the the tornado, and fled in his vehicle on Business 20. He observed the dissipation of the debris-filled tornado, and watched as large pieces of roof were deposited on his property causing additional minor damage.										
Mitchell County										
Colorado City	25	1256CST			0	0	0	0		Flash Flood
		1400CST								
Local law enforcement officials reported high water flowing in many city streets as a result of flash flooding. Very moist atmospheric conditions, a cold front, and sufficient upper level dynamics resulted in a broad band of moderate to occasionally heavy rainfall which developed over the Trans Pecos region of West Texas during the morning hours, and moved from southwest to northeast across the Permian Basin throughout the day. Strong convection embedded within the large precipitation shield resulted in flash flooding.										
A weak, but damaging, tornado struck near Colorado City during the early afternoon. The tornado developed as a narrow line of non-supercellular thunderstorms formed within the rain shield near the surface cold front.										
<u>TEXAS, Western North</u>										
NONE REPORTED.										
<u>UTAH, East</u>										
UTZ2022>025-027>029	Southeast Utah - Eastern Uinta Mountains - Eastern Uinta Basin - Tavaputs Plateau - Grand Flat And Arches - La Sal & Abajo Mountains - Canyonlands / Natural Bridges									
01	0000MST				0	0				Drought
30	2359MST									
Precipitation during the first half of the month brought minor drought relief to the extreme southeast portion of Utah. However, extreme to exceptional drought conditions continued across eastern Utah through the month. See the October 2003 Storm Data publication for a continuation on this drought situation.										
San Juan County	09	1100MST			0	0				Heavy Rain
Blanding		1530MST								
Persistent rainfall over several hours resulted in street flooding and mud flowing onto roads in Blanding. Most of the street flooding occurred between 1430 MST and 1530 MST.										
San Juan County	09	1200MST			0	0				Heavy Rain
Monticello to		1300MST								
4 N Monticello										
Heavy rains resulted in water up to 6 inches deep to flow across Highway 191.										
San Juan County	09	1320MST			0	0				Flash Flood
3 N Monticello to		1430MST								
4 N Monticello										
Water over a foot deep flowed across Highway 191 and closed the highway until the waters abated.										
UTZ2022	Southeast Utah									
	09	1500MST			0	0	10K			Strong Wind
Strong winds caused a hay barn to blow down.										
San Juan County	09	1830MST			0	0	1M			Flash Flood
17 S Bluff to		2300MST								
16 NE Bluff										

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
					Killed	Injured				

UTAH, East

Heavy rainfall resulted in widespread flooding and flash flooding in the area. A law enforcement vehicle en route to rescue stranded residents was caught and washed downstream in a flash flood where the water flowed 5 feet deep. Both vehicle occupants successfully escaped the flood waters, but were stranded for much of the night. 12 houses in Bluff and 6 houses in the community of Montezuma Creek were flooded with water 2 to 3 feet deep. Flash flooding was also reported in the community within the White Mesa Indian Reservation. A sand and gravel company near Bluff was completely inundated with water 20 to 25 feet deep. All of the vehicles and heavy equipment at the company were destroyed, as well as a large rock crusher. Many paved county roads were washed out, including large culverts that were obliterated. Sections of roads up to 60 feet in length were completely destroyed. Roads that were not destroyed were completely covered with large amounts of mud and debris. The St. Christopher Mission just east of Bluff was flooded. Several propane tanks were broken off their moorings and washed away. The San Juan River near Bluff ran at 20,000 cfs during the flooding event and completely covered a frequently used foot bridge for over 12 hours.

UTZ024

Eastern Uinta Basin

18	0500MST	0	0							Frost/Freeze
	0700MST									

A dry and cold air mass settled over northeast Utah resulting in widespread freezing temperatures across the eastern Uinta Basin. The minimum temperature at the Vernal ASOS was 30 degrees.

UTAH, West and Central

Washington County

Zion National Park

02	1645MST	0	0	0	0					Flash Flood
	2000MST									

Heavy rains falling on Slickrock caused flash flooding in Zion National Park. A landslide occurred near the east entrance tunnel, blocking the road. Flash flooding also occurred on Pine Creek and near the Watchman Campground.

Wayne County

Hanksville

06	1700MST	0	0	0	0					Flash Flood
	2000MST									

A thunderstorm dropped 0.94 inches of rain in 30 minutes in Hanksville, producing flash floods east of town on Bull Creek.

VERMONT, North and Central

Chittenden County

Jericho

03	2300EST	0	0	5K						Lightning
	2330EST									

A lightning bolt struck the Jericho fire department Wednesday night and damaged the radio and antenna.

VTZ011-019

Western Rutland - Eastern Rutland

19	1050EST	0	0	20K						High Wind (G40)
	2000EST									

The remnants of Hurricane Isabel moved across western New York the afternoon of Friday, September 19th and into Canada by evening. Strong winds accompanied this system and were enhanced by the proximity of a strong high pressure system over the Canadian Maritimes. Trees and power lines were blown down across Rutland county, especially noted in Castleton, Brandon and Rutland.

VTZ018

Eastern Addison

19	1057EST	0	0	10K						High Wind (G52)
	2000EST									

The remnants of Hurricane Isabel moved across western New York the afternoon of Friday, September 19th and into Canada by evening. Strong winds accompanied this system and were enhanced by the proximity of a strong high pressure system over the Canadian Maritimes. A wind gust of 60 mph (52 knots) was reported in Starksboro. Elsewhere, there were trees and power lines blown down.

VTZ009

Western Addison

19	1120EST	0	0	30K						High Wind (G40)
	2000EST									

The remnants of Hurricane Isabel moved across western New York the afternoon of Friday, September 19th and into Canada by evening. Strong winds accompanied this system and were enhanced by the proximity of a strong high pressure system over the Canadian Maritimes. Many trees and power lines were blown down, especially noted in Salisbury, Leicester, Middlebury and New Haven. A tree fell on and damaged a car in Salisbury.

VTZ017

Eastern Chittenden

19	1205EST	0	0	20K						High Wind (G40)
	2030EST									

The remnants of Hurricane Isabel moved across western New York the afternoon of Friday, September 19th and into Canada by evening. Strong winds accompanied this system and were enhanced by the proximity of a strong high pressure system over the Canadian Maritimes. Trees and power lines were blown down in Jericho. In Richmond trees fell on and damaged 3 trucks.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

VERMONT, North and Central

VTZ006

Lamoille

19 1228EST
1800EST

0

0

10K

High Wind (G48)

The remnants of Hurricane Isabel moved across western New York the afternoon of Friday, September 19th and into Canada by evening. Strong winds accompanied this system and were enhanced by the proximity of a strong high pressure system over the Canadian Maritimes. A few trees and power lines were blown down, especially across western portions of the county. A weather spotter reported 55 mph (48 knots) winds in Pleasant Valley at 128 pm EDT (1228 pm EST).

VTZ005

Western Chittenden

19 1440EST
2030EST

0

0

10K

High Wind (G40)

The remnants of Hurricane Isabel moved across western New York the afternoon of Friday, September 19th and into Canada by evening. Strong winds accompanied this system and were enhanced by the proximity of a strong high pressure system over the Canadian Maritimes. Trees and power lines were blown down in Essex. At Burlington Airport, winds reached 46 mph or 40 knots.

VTZ002-016

Western Franklin - Eastern Franklin

19 1440EST
2100EST

0

0

20K

High Wind (G40)

The remnants of Hurricane Isabel moved across western New York the afternoon of Friday, September 19th and into Canada by evening. Strong winds accompanied this system and were enhanced by the proximity of a strong high pressure system over the Canadian Maritimes. Trees and power lines were blown down across the area with most reports from Enosburg, Fairfield and Fairfax.

Addison County Countywide

29 1430EST
1530EST

0

0

Lightning

Chittenden County Countywide

29 1430EST
1530EST

0

0

Lightning

Thunderstorms formed during the mid and late afternoon hours with pea size hail, frequent cloud to ground lightning and torrential rainfall from Burlington south to Vergennes and moved east across the counties.

VERMONT, South

NONE REPORTED.

VIRGIN ISLANDS

St. Croix County St. Croix

21 1600AST

1

1

Lightning

Lightning struck and killed one person and injured another at the Gordon Finch Molasses Pier on the south shore while loading a boat onto a trailer. Thunderstorms left several Saint Croix neighborhoods without power. M42IW

VIRGINIA, East

NOT RECEIVED.

VIRGINIA, Extreme Southwest

NONE REPORTED.

VIRGINIA, North

NOT RECEIVED.

VIRGINIA, Northwest

NONE REPORTED.

VIRGINIA, Southwest

Lexington (C)

Lexington

02 1515EST

0

0

0

Thunderstorm Wind (G60)

Thunderstorm winds during the afternoon of the 2nd downed trees in Lexington.

Rockbridge County

2.5 NE Rockbridge Batl

04 0150EST
0400EST

0

0

Flash Flood

Rockbridge County

Riverside

04 0300EST
0330EST

0

0

Flash Flood

Heavy thunderstorm rains during the early morning of the 23rd produced flash flooding.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

VIRGINIA, Southwest

Heavy thunderstorm rains caused Walker Creek and Hays Creek to flood, 2.5 miles northeast of Rockbridge Baths. Heavy thunderstorm rains also caused flooding along Route 608 in Riverside.

Pittsylvania County

Blairs 04 1330EST 0 0 15K **Thunderstorm Wind (G70)**

Danville (C)

Danville 04 1335EST
1515EST 0 0 5K **Flash Flood**

Heavy thunderstorm rains during the afternoon of the 4th produced flash flooding and damaging winds.

Heavy thunderstorm rains caused Apple Branch to flood onto Route 58 in Danville, closing the westbound lane with up to 3 feet of water and caused Sandy Creek to flood and close part of Beavers Mill Road in Danville. An automobile was also submerged in flooding on Riverside Drive in Danville.

Thunderstorm winds flipped a tractor trailer and tore the tin roof off of a barn in Blairs.

VAZ058

Halifax

05 0138EST 0 0 **Flood**
06 1430EST

Heavy rainfall on the 4th resulted in minor flooding on the Dan River at South Boston. The Dan River crested a little over 3 feet above flood stage around 1 AM on the 6th at South Boston.

VAZ033-035-

043>047-058>059

Franklin - Amherst - Henry - Pittsylvania - Campbell - Appomattox - Buckingham - Halifax - Charlotte

18 1330EST 0 0 1.8M 1.3M **Tropical Storm**
2150EST

As Hurricane Isabel weakened to a tropical storm, winds were sustained during the mid afternoon and early evening at up to 50 to 60 mph with gusts near 70 mph. This produced widespread wind damage with numerous trees and power lines reported down.

In Campbell County, 2 homes were destroyed and 10 homes suffered minor damage. In Amherst County, 1 residence suffered minor damage. In Appomattox County 1 home suffered major damage. In Buckingham County, 1 home was destroyed, 3 homes suffered major damage and 1 business suffered minor damage. In Charlotte County, 2 homes were destroyed, 30 homes suffered major damage, and 5 businesses suffered minor damage. Crop damage was also reported in Charlotte County. In Pittsylvania County, 1 home was destroyed, 20 suffered minor damage, 3 businesses suffered major damage, and crop damage was reported.

VAZ013>014-

018>020-022>024-032

Pulaski - Montgomery - Craig - Alleghany - Bath - Roanoke - Botetourt - Rockbridge - Patrick

18 1900EST 0 0 0 **Tropical Storm**
19 0100EST

As Tropical Storm Isabel moved inland, winds sustained at 25 to 50 mph with gusts to near 60 mph during the late afternoon of the 18th through the early morning of the 19th, especially over the higher elevations, resulted in numerous trees and power lines being downed.

VAZ014-024-035

Montgomery - Rockbridge - Amherst

18 2000EST 0 0 650K **Flood**
19 0800EST

Flooding along the South River as a result of Hurricane Isabel caused significant damage to property and infrastructure from the northern Rockbridge county border downstream to the South River's confluence with the Maury River. Flooding also occurred in portions of Montgomery and Amherst Counties.

Overall nearly 500 families were impacted. 12 single family dwellings were destroyed or made permanently uninhabitable, and over 60 single family dwellings suffered major damage (having a foot or more of mud in them). In terms of infrastructure, Route 608 which parallels the South River was washed out or undermined in several locations along its length. Three permanent bridges over the South River were destroyed; one, a steel bridge was broken into three pieces - roadbed, and each side, with the three large pieces being carried different distances downstream from its original location. A fourth bridge across the river (abandoned C&O Railroad bridge) about 200 yards upstream from its confluence with the Maury River, now resides at the mouth of the South River, and is embedded in the stream bottom; in a position to collect debris as it floats down the South River. This bridge was part of the scenic "Chessie Trail" which runs from Buena Vista to Lexington. In addition to the damage listed above, 25 to 30 head of livestock were lost in the flood.

South River communities directly impacted by the flood include: Vesuvius, Marlbrook, Midvale, Cornwall and Mountain View

In Vesuvius - 20 families were displaced. 2 mobile homes were destroyed, 3 double-wide mobile homes suffered major damage (one washed downstream and wrapped around a tree).

In Marlbrook - 2 large homes had severe damage...moved off foundations. 2 other homes were severely undermined.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

VIRGINIA, Southwest

In Marlbrook - 2 large homes had severe damage...moved off foundations. 2 other homes were severely undermined.

Between Marlbrook and Midvale two bridges were lost.

In Midvale - Steel Highway bridge across the River broken up and carried downstream

In Cornwall - 5 of 7 mobile homes in a small mobile home park were destroyed, the other two had major damage.

In Amherst County the heavy rain produced small stream and urban flooding county wide. Heavy rain also caused significant flooding in near Shawsville in Montgomery County.

VAZ047-058>059

Buckingham - Halifax - Charlotte

19	0530EST				0	0			Flood
20	1630EST								

The remnants of hurricane Isabel produced heavy rainfall on the 18th that resulted in minor flooding on the Roanoke River and up to moderate flooding on the James River.

The James River at Brems Bluff crested 7.5 feet above flood stage around 4 PM on the 19th. The Roanoke River at Randolph crested about 2 feet over flood stage around 315 AM on the 20th.

VAZ019>020

Alleghany - Bath

19	1400EST				0	0	2.5K		Flood
20	0200EST								

Runoff from the heavy rains of Tropical Storm Isabel produced flooding along the Cowpasture river in Bath and Alleghany counties. In Bath County a foot bridge was washed away in Williamsville at 3:00 PM on the 19th. In Alleghany County a campground 3 miles east of Iron Gate was flooded.

Halifax County

2 SSW Crystal Hill to 1.5 S Crystal Hill	22	2200EST 2202EST	0.6	30	0	0	2K		Tornado (F0)
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Halifax County

5 E Halifax	22	2300EST			0	0	10K		Thunderstorm Wind (G60)
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Lynchburg (C)

Lynchburg	22	2300EST			0	0	10K		Thunderstorm Wind (G60)
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Halifax County

4 E Halifax to 4.3 ENE Halifax	22	2330EST 2332EST	0.3	30	0	0	2K		Tornado (F1)
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Halifax County

1 NNW Paces	23	0200EST 0630EST			0	0	0		Flash Flood
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VAZ043

Henry

23	0200EST 0430EST				0	0	0		Flood
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Rockbridge County

Riverside	23	0230EST 0500EST			0	0	50K		Flash Flood
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Thunderstorms during the late evening of the 22nd, into early morning of the 23rd produced a couple of tornados, flash flooding, small stream flooding, and damaging winds.

A tornado developed in a cornfield about 2 miles south-southwest of Crystal Hill in Halifax County, and traveled north-northeast about 0.6 miles before dissipating. This tornado was about 30 yards wide. It knocked down trees, with one falling on a house, resulting in gutter and siding damage.

Another tornado developed 4 miles east of Halifax, in Halifax County, and traveled a quarter mile to the north-northeast before dissipating. This tornado was about 30 yards wide. It snapped off numerous trees, and ripped shingles off the roof of a house.

Heavy thunderstorm rains produced flash flooding of the South River near Riverside with damage to several homes. Small stream flooding occurred across the western part of Henry County. Big Toby Creek, 1 mile north-northwest of Paces, overflowed its banks, and flooded Ashton Hall Road.

Thunderstorm winds downed trees, with damage to a home, in Lynchburg, and a home 5 miles east of Halifax.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

VIRGINIA, Southwest

VAZ058>059

Halifax - Charlotte

23 1445EST

25 1730EST

0

0

Flood

Heavy rainfall during the evening hours on the 22nd and early morning hours on the 23rd resulted in minor flooding on portions of the Roanoke and Dan Rivers.

The Dan River crested almost a foot above flood stage at Paces at 300 PM on the 24th and almost 5 feet above flood stage at 1030 PM on the 24th at South Boston. The Roanoke River crested almost 2 feet above flood stage at Randolph at 4 AM on the 24th

Alleghany County

West Portion

27

1555EST

0

0

0

Thunderstorm Wind (G60)

Covington (C)

27

1620EST

0

0

Flash Flood

1800EST

Botetourt County

5 N Eagle Rock

27

1705EST

0

0

0

Thunderstorm Wind (G60)

Giles County

Central Portion

27

1710EST

0

0

Flash Flood

1800EST

Pittsylvania County

Chatham

27

1915EST

0

0

0

Thunderstorm Wind (G60)

Thunderstorms during the afternoon of the 27th produced damaging winds and flash flooding.

Heavy thunderstorm rains caused mudslides that closed Route 18 near Covington. Heavy thunderstorm rains also caused flash flooding in central Giles County with several roads closed, and Grey Sulfur Road washed out.

Thunderstorm winds downed trees across western Alleghany County, 5 miles north of Eagle Rock, and in and around Chatham

WASHINGTON, Northeast

WAZ043

Okanogan Valley

11 2300PST

0

0

High Wind (G71)

12 0300PST

A strong cold front moved through the Okanogan River valley during the early morning hours of September 12th creating local high winds. In Tonasket trees were blown. The Kramer Remote Automated Weather Station recorded a wind gust of 71 mph.

Spokane County

Spokane

16

1530PST

0

10

50K

Hail (0.25)

1600PST

During the afternoon of September 19th an isolated rain shower with small hail moved over the Spokane area. On the westbound lane of Interstate 90 drivers were blinded by the low sun shining in their eyes while small hail created slippery conditions. Over 50 cars and trucks were involved in numerous accidents and pileups along a four mile stretch of westbound I-90 in the city of Spokane.

WASHINGTON, Northwest

King County

Kirkland to

Duvall

08

0200PST

0

0

5K

Heavy Rain

0700PST

After about a month with little or no rainfall, a few heavy showers opened up over eastern King and Snohomish counties. Up to 1.5 inches fell in Kirkland, where a couple of homes and a church were flooded. In Duvall, 3500 customers lost power due to toppled trees.

WASHINGTON, Southeast

Kittitas County

10 N Roslyn

01

0000PST

0

0

Wildfire

30 2359PST

The Square Lake Fire began on August 25th, and burned a total of 1,097 acres. The fire was a lightning sparked fire, and became completely contained on September 30th.

Kittitas County

22 ENE Cle Elum

24

0000PST

0

0

Wildfire

30 2359PST

The Crystal Creek Fire was a lightning sparked fire which burned 1,584 acres. The fire became completely contained on October 14th.

WASHINGTON, Southwest

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

WEST VIRGINIA, East

NOT RECEIVED.

WEST VIRGINIA, North

Preston County

Bull Run	01	1725EST 1825EST			0	0			Flash Flood
Road flooded along Bull Run.									

Preston County

Newburg	01	1805EST 1900EST			0	0			Flash Flood
Road flooded.									

Preston County

Masontown	01	1835EST 1930EST			0	0			Flash Flood
Road flooded.									

Marion County

Fairmont	01	1845EST 2000EST			0	0			Flash Flood
Flooding along Pleasant Valley Rd and East Park Rd.									

Monongalia County

Morgantown	01	1845EST 2000EST			0	0			Flash Flood
Flooding along Falling Run Rd and Summer School Rd.									

Monongalia County

Morgantown	01 02	2345EST 0045EST			0	0			Flash Flood
State Route 7 flooded.									

Preston County

Masontown	01 02	2345EST 0130EST			0	0			Flash Flood
Several roads flooded.									

Preston County

Newburg	02	0000EST 0100EST			0	0			Flash Flood
State Route 92 flooded.									

Preston County

Terra Alta	02	0000EST 0130EST			0	0			Flash Flood
Salt Lick Road flooded.									

Marion County

Colfax	02	0130EST 0145EST			0	0			Flash Flood
Coal Bank Hill Road flooded near Colfax.									

Tucker County

Coketon	09	0330EST 0415EST			0	0			Flash Flood
Route 32 and several roads flooded by overflowing Blackwater River.									

WVZ023-041

Preston - Tucker

18	2200EST			0	0	4K			High Wind (G52)
Remnants of Hurricane Isabel caused wind gusts in the neighborhood of 60 mph, knocking down trees and utility lines in various sections of these counties. Isabel passed over Pittsburgh Pa around 8 AM EDT on the 19th. Wind gusts from Isabel started after 7 PM on the 18th and continued, from time to time, through the afternoon of the 19th.									

WVZ041

Tucker

19	0415EST 0700EST			0	0				Flood
Numerous roads remained flooded.									

WVZ023

Preston

19	1100EST 1600EST			0	0				Flood
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Remnants of Hurricane Isabel dumped nearly 4 inches of rain on the headwaters of the Cheat River. At Rowlesburg, the Cheat River rose from 4 ft at 630 AM EDT on the 19th to flood stage, which is 16 ft, at Noon. It crested at 16.8 ft at 1 PM EDT, and fell below flood stage by 5 PM EDT. Numerous small streams and roads were flooded in Preston and Tucker County in WV, as well as Garrett County MD.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

WEST VIRGINIA, North

Preston County

Howesville 27 1455EST 0 0 2K **Thunderstorm Wind (G50)**
Trees down on Route 26.

Preston County

Tunnelton 27 1526EST 0 0 **Thunderstorm Wind (G50)**
Trees down.

WEST VIRGINIA, Southeast

NONE REPORTED.

WEST VIRGINIA, West

Jackson County

Evans 01 1520EST 0 0 **Thunderstorm Wind (G50)**
Power lines and a power pole were knocked down along Route 87.

WVZ007>008-016-018-028>029

Mason - Jackson - Roane - Calhoun - Braxton - Gilmer

02 0900EST
1530EST 0 0 300K **Flood**

South of a strong frontal zone, rain of 2 to 4 inches fell in a narrow west to east band, from the evening on the 1st, through the afternoon on the 2nd. The heaviest rain appeared across central Jackson County, near Ripley, through northern Roane County, around Spencer and Reedy. The heavy rain continued east into central Calhoun County and southern Gilmer County. A spotter near Normantown of Gilmer County reported 4 inches of rain. An automated rain gauge near Mt Zion of Calhoun County reported 3.7 inches of rain. The cooperative observer at Ripley measured 3.1 inches of rain.

By late morning on the 2nd, several roads were covered and damaged by water from overflowing small streams. A Jackson County highway supervisor said, "water over the roads was our biggest problem". The basement area of the Normantown Elementary School in Gilmer County was flooded by Steer Creek. About 4 inches of water covered the basement hallway, with lesser amounts in the basement's 4 classrooms and 2 bathrooms. Water flooded the school's locker room and came within one step of flowing across the gym floor. Gilmer County volunteer firefighters helped moved school supplies and equipment from the basement to lessen the damage. The 4 teachers and principal moved the 60 students to the higher gym, until buses arrived to take the students home. Some students had to go to the high school until the water receded. The first year principal said, "we were prepared but I was not expecting something this major to happen so soon". At Sand Fork Elementary School, about a dozen students remained after an early dismissal. Many other school systems closed early for the day. In Calhoun County, one house had 18 inches of water inside. In Jackson County, one house in the Little Creek area sustained water damage. In Reedy of Roane County, water got into the community building and into the fire house.

The Little Kanawha River had a strong 13 foot vertical rise on the 2nd. Yet, the late evening crest remained below flood stage.

WVZ013-025>026-034>035

Lincoln - Logan - Boone - Wyoming - Raleigh

04 0600EST
1100EST 0 0 125K **Flood**

The last wave of rain, along a strong frontal boundary, hit the southern coal fields counties from the predawn through the late morning on the 4th. Rain of 2 to 3.5 inches fell. The cooperative observer in Beckley measured 3.52 inches. The Beckley airport and Oceana both had 3.25 inches. Dry Creek had 3.1 inches of rain. Whitesville of eastern Boone County saw 2.6 inches.

In Lincoln County, Frances Creek got into a few homes near Harts. In Logan County, 2 houses received water damage. Near Chapmanville in Logan County, private bridges on Garrett Fork were damaged. Several roads were flooded throughout these counties.

Pocahontas County

Bartow 19 0100EST
0230EST 0 0 1K **Flash Flood**

Small streams feeding into the East Fork of the Greenbrier River flooded. The cooperative observer at Bartow measured 2.4 inches of rain.

Randolph County

Northeast Portion 19 0115EST
0230EST 0 0 2K **Flash Flood**

Water was 2 feet deep across Route 29 near Job and Whitmer. The nearby observer at Gladys measured a 24 hour rain total of 3.1 inches. Along the Randolph and Tucker County border, portions of the stream bank along Red Creek were damaged. Future high water would threaten the few dwellings.

Steady rains from the remnants of Hurricane Isabel caused swollen streams by late on the 18th. Embedded showers early on the 19th caused small streams to flood roads. In terms of dwellings, only one old mobile home at Gladys was damaged.

The presidential disaster declaration included counties as far west as Randolph County. See FEMA disaster number 1496 for details

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
Killed	Injured									

WEST VIRGINIA, West

Upshur County

Queens

21

1730EST
1830EST

0

0

1K

Flash Flood

A nearly stationary thunderstorm formed along the county border between Upshur and Randolph Counties. Near Laurel Run, rains of around 2 inches likely fell in one hour. Roads were flooded and slightly damaged. No dwellings were affected.

WISCONSIN, Northeast

NONE REPORTED.

WISCONSIN, Northwest

NONE REPORTED.

WISCONSIN, Southeast

WIZ046>047-

051>052-056>060-
062>072

Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha

01

0000CST

0

0

Drought

30 2359CST

Drought conditions continued from August, 2003, through September 2003, across south-central and southeast Wisconsin. Much of this area was in a severe drought (D2) status during the first part of the month, however, beneficial rains fell during the period of September 12-14. Rainfalls of 3 to 5 inches from Lafayette County to Green Lake County (with a small area of 6 inches in southwest Iowa County and northwest Lafayette County) were enough to lower the drought rating from severe to moderate (D1) in this area. However, monthly rainfall totals of about 2 inches or less were recorded near Lake Michigan, which allowed the drought rating over southeast Wisconsin to remain at severe. The monthly rainfall at Madison's (Dane Co.) Truax Field was 4.24 inches, or 1.16 above normal. This was only the 3rd month of the entire year to date that had above normal rainfall. The other two months (May and July) were barely above normal in the rainfall department. At Milwaukee's (Milwaukee Co.) Mitchell Field, only 1.65 inches of rain fell during September, 2003, or 1.65 inches below normal. May, 2003 was the only month to date in 2003 with above normal rainfall at Milwaukee (0.59 inch above normal). Water levels in lakes, rivers, and streams remained below normal for the entire month, although they briefly rose on September 13th and 14th in response to the rains. Newspaper reports indicated that corn yields were expected to be in the 70 to 100 bushels per acre range, compared to a normal of 130 to 140. Soybean yields were expected to range from 20 to 30 bushels per acre, about 50% of normal. In fact, some farmers were not expecting to harvest much of anything in October. Some parts of south-central and southeast Wisconsin have only received half of their normal precipitation from November, 2002 through September, 2003. However, some spotty locations in 2003 have managed to pick up enough rain to have near average crop yields. Some farmers felt that the drought in 2003 was perhaps as bad as the 1988 drought, or worse, and that one would have to go back to 1933 to find a summer as dry as the 2003 summer. Throughout south-central and southeast Wisconsin, some trees continued to drop their leaves (without color) due to the continued dryness.

WISCONSIN, Southwest

NONE REPORTED.

WISCONSIN, West

NONE REPORTED.

WYOMING, Central and West

Teton County

10 E Fishing Bridge

01

0000MST

0

0

Wildfire

13

0800MST

The East Wildfire continued to burn into early September. The fire burned a total of 23,500 acres in August and September. The total estimated cost of fighting the fire was 6.9 million dollars.

Park County

25 SW Cody

01

0000MST

0

0

Wildfire

04

0800MST

The Boulder Basin Wildfire continued to burn into early September. The fire burned a total of 11,553 acres in August and September. The estimated total cost of fighting the fire was 1.9 million dollars.

Park County

30 W Cody

01

0000MST

0

0

Wildfire

06

1000MST

The Blackwater Wildfire continued to burn into early September. A total of 6,805 acres were burned. The estimated cost of fighting the fire was 1.2 million dollars.

Natrona County

19 N Casper

08

1530MST

0

0

0

0

Tornado (F0)

1535MST

At 330 pm MST, law enforcement reported a tornado 19 N of Casper. One mobile home sustained heavy damage.

Storm Data and Unusual Weather Phenomena

September 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

WYOMING, Central and West

WYZ002-008-014>015-017 **Absaroka Mountains - Bighorn Mountains West - Wind River Mountains West - Wind River Mountains East - Wind River Basin**

16	2100MST	0	0	Heavy Snow
17	2100MST			

An early season storm system brought heavy snow to parts of northern and central Wyoming. Snowfall amounts ranged from 3 to 6 inches in the lower elevations to 7 to 15 inches in the mountains.

WYOMING, Extreme Southwest

NONE REPORTED.

WYOMING, North Central

NOT RECEIVED.

WYOMING, Northeast

NONE REPORTED.

WYOMING, Southeast

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

August 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops		Character of Storm
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Additions/Corrections

COLORADO, West

Delta County

8 W Delta	14	1725MST 1730MST			0	0			Funnel Cloud
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FLORIDA, East Central

Brevard County

2 NW Rockledge to Rockledge	06	1320EST 1330EST	1	30	0	0	0	0	Tornado (F0)
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A waterspout formed over the Intracoastal Waterway and moved to the southwest over Rockledge. An NWS survey team found numerous witnesses who saw the spout move on shore producing a path of broken palm branches, overturned flower pots. No significant damage could be located.

Reference Notes:

Storm Data Disclosure

Storm Data is an official publication of the National Oceanic and Atmospheric Administration (NOAA) which documents the occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, significant property damage, and/or disruption to commerce. In addition, it is a partial record of other significant meteorological events, such as record maximum or minimum temperatures or precipitation that occurs in connection with another event.

Some of the information appearing in Storm Data may have been provided by or gathered from sources outside the National Weather Service (NWS), such as the media, law enforcement and/or other government agencies, private companies, individuals, etc. An effort is made to use the best available information, but because of time and resource constraints, information from these sources may be unverified by the NWS. Therefore, when using information from Storm Data, customers should be cautious as the NWS does not guarantee the accuracy or validity of the information. Further, when it is apparent information appearing in Storm Data originated from a source outside the National Weather Service (frequently credit is provided), Storm Data customers requiring additional information should contact that source directly. In most cases, NWS employees will not have the knowledge to respond to such requests. In cases of legal proceedings, under Department of Commerce regulations and/or rules of the court, NWS employees are not legally obligated to provide written or verbal testimony.

Fatality Codes: For events that include a fatality, there is a code containing the gender, age and fatality location at the end of the event narrative.

1st letter: Gender (M/F) – 2nd numbers: Age – 3rd letters Fatality location (see table below)

Example: M51IW – Male, 51 years of age, fatality occurred In Water.

Fatality Location Abbreviations:

BF	Ball Field	MH	Mobile Home
BO	Boating	OT	Other
BU	Business	OU	Outside/Open Areas
CA	Camping	PH	Permanent Home
EQ	Heavy Equipment/Construction	SC	School
GF	Golfing	TE	Telephone
IW	In Water	UT	Under Tree
LS	Long Span Roof	VE	Vehicle

List of Acronyms:

NWS	- National Weather Service
NOAA	- National Oceanic and Atmospheric Administration
WCM	- Warning Coordination Meteorologist – The meteorologist at each NWS Office responsible for reporting severe weather events
LST	- Local Standard Time Storm Data attempts to always use “Standard Time”
EST	- Eastern Standard Time
EDT	- Eastern Daylight Time

CST	- Central Standard Time
CDT	- Central Daylight Time
PST	- Pacific Standard Time
PDT	- Pacific Daylight Time

Other Notes:

An “Episode” is an entire storm system and can contain many different types of events.

An “Event” is an individual type of storm event.

When listing wind speed values under “Character of Storm”, ex. High Wind (G81), the G indicates a “Gust” which is a peak 5-second averaged wind speed in Knots (kts). 1 kt. = 1.152 mph. This number can be either E (estimated) by damage caused, or M (measured) by known calibrated anemometers. Ex. (M61) = measured 61 knots or E(75) = estimated at 75 knots.

All wind speeds listed are estimated by NWS personnel by the amount and type of damage unless otherwise noted with an “M” which represents an actual wind speed as measured by official NWS approved anemometer.

When listing hail size under “Character of Storm”, ex. Hail (2.25), the hail size is given in inches and hundredths of inches.

When listing property and crop damage, the figures indicated are the best guess made by the NWS from the available sources of information at the time of the printing.

The fatalities, injuries, and damage amounts appearing in tropical cyclone events are attributed only to wind damage experienced in the coastal counties/parishes listed. Other tropical cyclone related events such as tornadoes and flooding are listed within their separate event types.

The Saffir-Simpson Scale

Category One Hurricane:

Winds 74-95 mph (64-82 kt or 119-153 kph). Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage.

Category Two Hurricane:

Winds 96-110 mph (83-95 kt or 154-177 kph). Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings.

Category Three Hurricane:

Winds 111-130 mph (96-113 kt or 178-209 kph). Storm surge generally 9-12 ft above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Flooding near the coast destroys smaller structures with larger structures damaged by battering of floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required.

Category Four Hurricane:

Winds 131-155 mph (114-135 kt or 210-249 kph). Storm surge generally 13-18 ft above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10 km).

Category Five Hurricane:

Winds greater than 155 mph (135 kt or 249 kph). Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles (8-16 km) of the shoreline may be required.

The Fujita Scale

F-Scale	Intensity	Wind Speed (mph)	Typical Damage (Suggested)
F0	Gale Tornado	40 - 72	Tree branches broken, chimneys damaged, shallow-rooted trees pushed over; sign boards damaged or destroyed, outbuildings and sheds destroyed
F1	Moderate	73 - 112	Roof surfaces peeled off, mobile homes pushed off foundations or overturned, moving autos pushed off the roads, garages may be destroyed. Category 1-2 hurricane wind speed
F2	Significant	113 - 157	Roofs blown off frame houses; mobile homes rolled and/or destroyed, train boxcars pushed over; large trees snapped or uprooted; airborne debris can cause damage. Category 3-4 hurricane wind speed
F3	Severe	158 - 206	Roofs and walls torn off well constructed houses; trains overturned; large trees uprooted, can knock down entire forest of trees. Category 5 hurricane wind speed
F4	Devastating	207 - 260	Well-constructed frame houses leveled; structures with weak foundations blown off some distance; automobiles thrown, large airborne objects can cause significant damage.
F5	Incredible	261 - 318	Brick, stone and cinderblock buildings destroyed, most debris is carried away by tornadic winds, large and heavy objects can be hurled in excess of 100 meters, trees debarked, asphalt peeled off of roads, steel reinforced concrete structures badly damaged.
F6	Inconceivable	319 - 379	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the damage produced by F4 and F5 wind speeds that would surround the F6 winds.



Typical F0 Tornado Damage

Note the trees are stripped of leaves, but the trees remain standing. Only light roof damage and a few missing shingles.



Typical F1 Tornado Damage

Note the uprooted trees and missing shingles from the roof. There is significant roof damage.



Typical F2 Tornado Damage

This home is missing its entire roof but the exterior walls remain intact. Some of the stronger hardwood trees remain standing.



Typical F3 Tornado Damage

This home is missing the entire roof as well as some of the exterior walls. Trees are blown over or snapped near the base and outbuildings are destroyed.



Typical F4 Tornado Damage

This home is almost completely obliterated, with no walls standing. The debris from the home is where the house once stood.



Typical F5 Tornado Damage

These homes have been completely removed from their original locations. The debris field has been scattered some distance from their foundation.

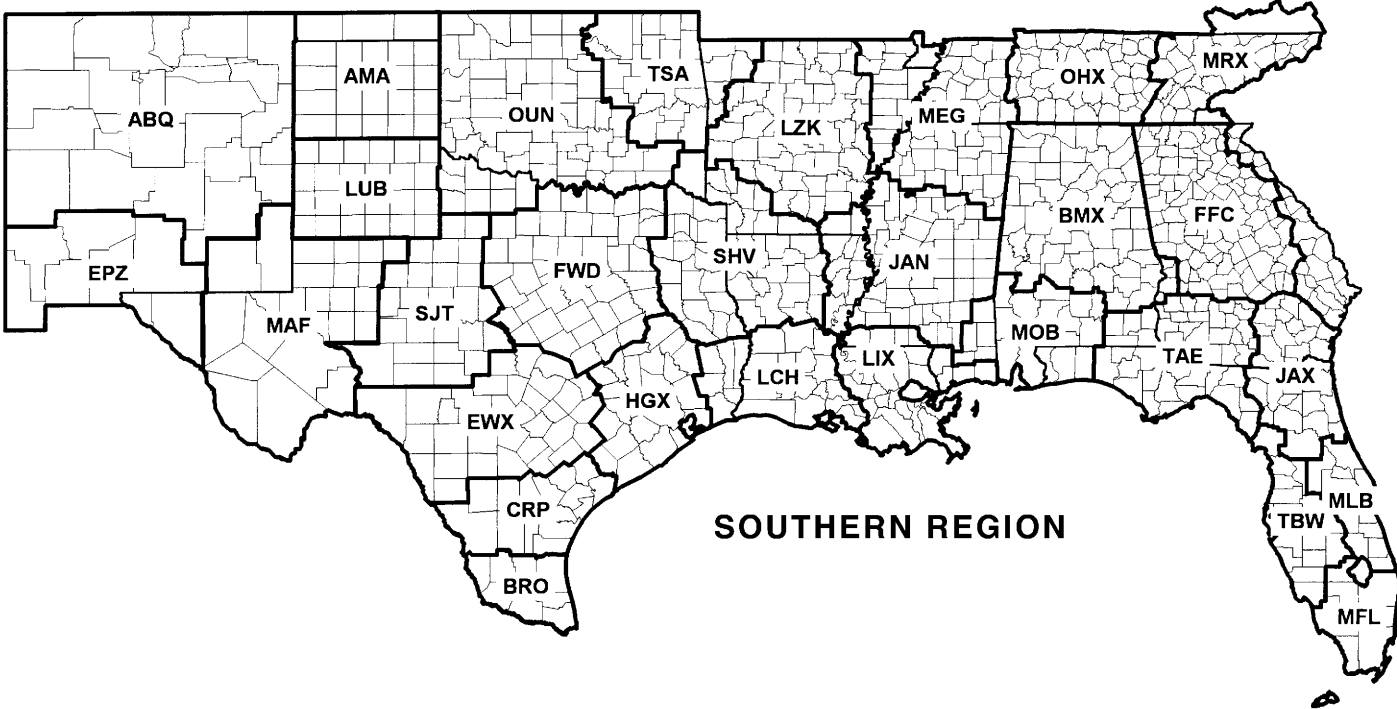


Typical F5 Tornado Damage

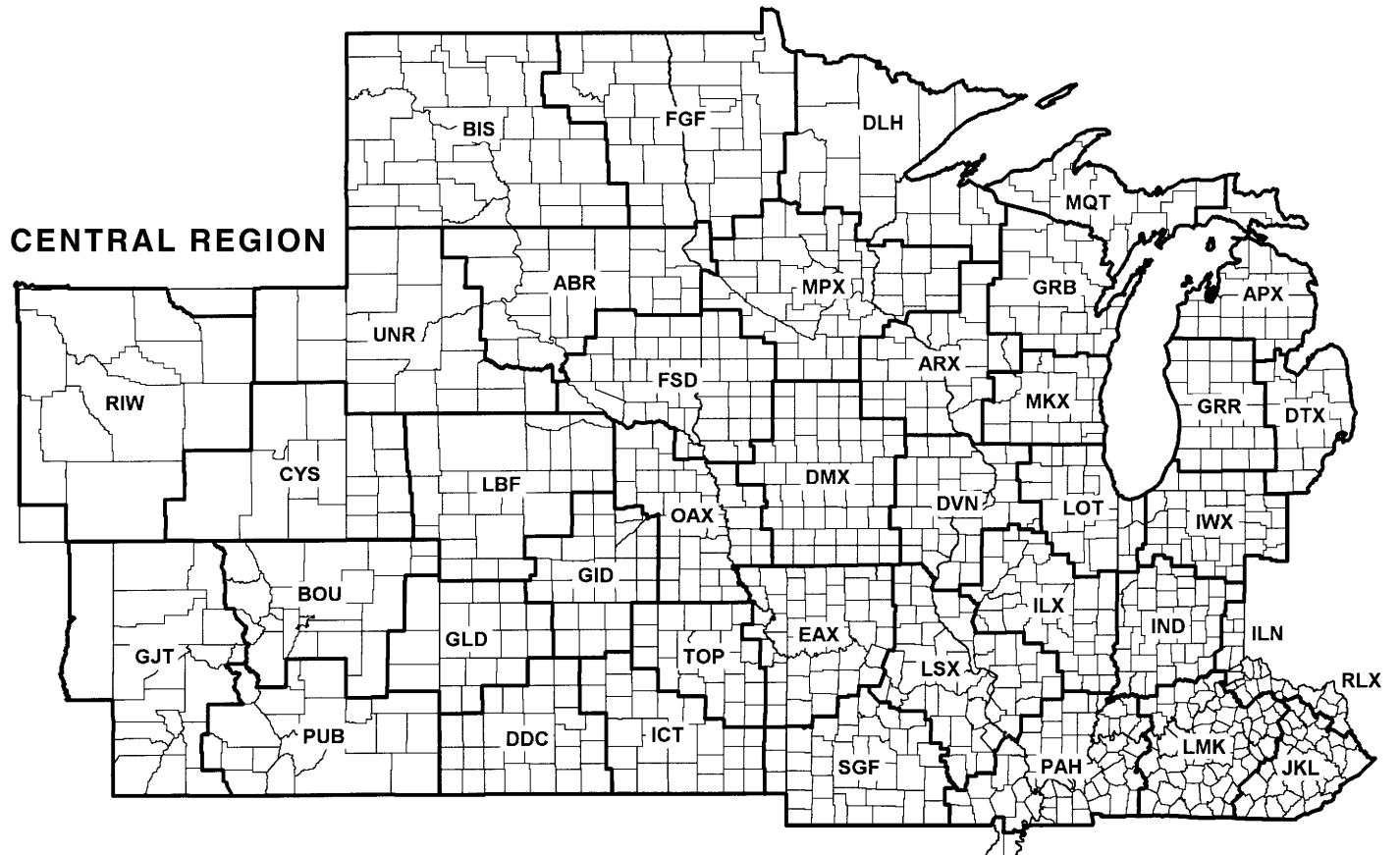
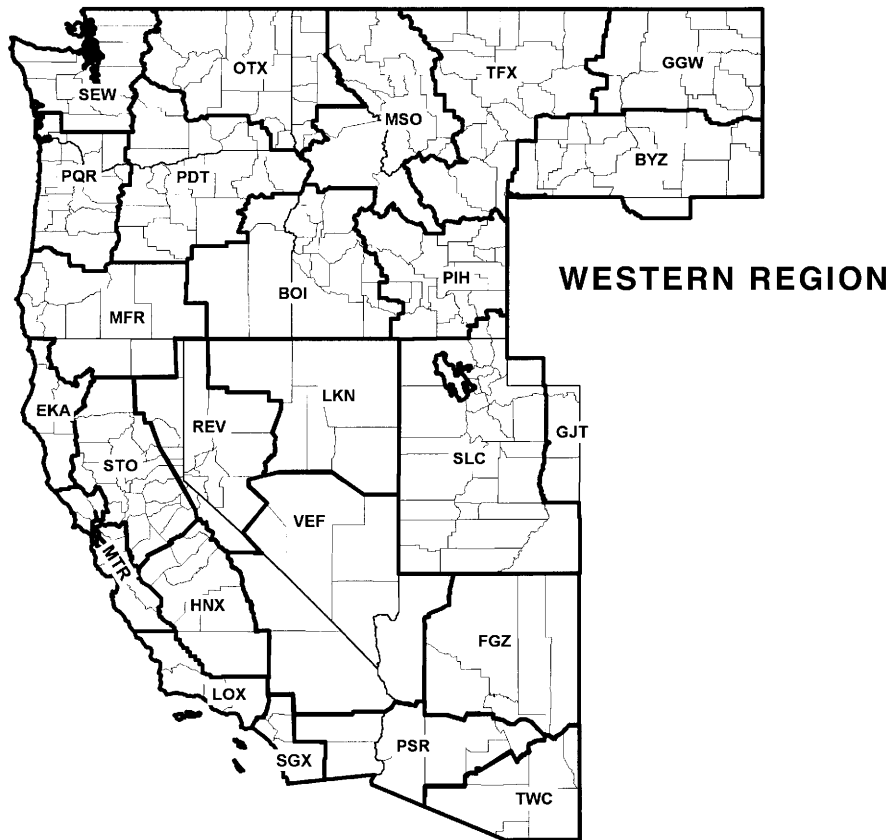
The asphalt surface has been peeled off of this road.

(All photographs courtesy of Brian Smith, Meteorologist, National Weather Service, Valley NE.)

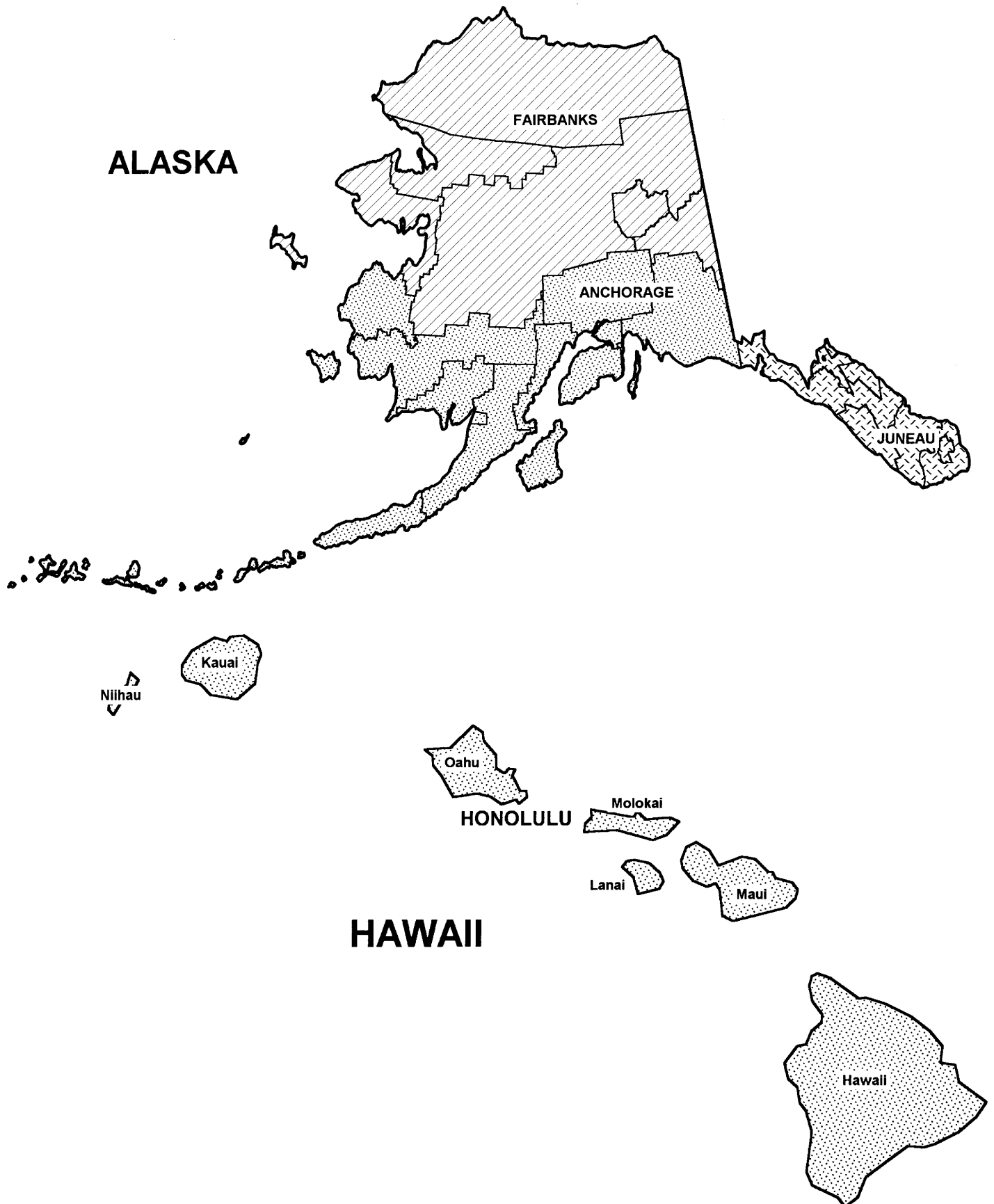
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MODERNIZED COUNTY WARNING AREAS



These and other publications are available from the National Climatic Data Center

Hourly Precipitation Data

This publication contains hourly precipitation amounts obtained from recording rain gages located at National Weather Service, Federal Aviation Administration, and cooperative observer stations. Published data are displayed in inches and tenths or inches and hundredths at local standard time. **HPD** includes maximum precipitation for nine (9) time periods from 15 minutes to 24 hours, for selected stations.

Climatological Data

Monthly editions contain station daily maximum and minimum temperatures and precipitation. Some stations provide daily snowfall, snow depth, evaporation, and soil temperature data. Each edition also contains monthly summaries for heating and cooling degree days (65 degree F base). The July issue contains a recap of monthly heating degree days and snow data for the preceding July through June.

The Annual issue contains monthly and annual averages of temperature, precipitation, temperature extremes, freeze data, soil temperatures, evaporation, and a recap of monthly cooling degree days.

Storm Data

Monthly issues contain a chronological listing, by states, of occurrences of storms and unusual weather phenomena. Reports contain information on storm paths, deaths, injuries, and property damage. An "Outstanding storms of the month" section highlights severe weather events with photographs, illustrations, and narratives. The December issue includes annual tornado, lightning, flash flood, and tropical cyclone summaries.

Monthly Climatic Data for the World

This publication contains monthly means for temperature, pressure, precipitation, vapor pressure, and sunshine for approximately 2,000 surface data collection stations worldwide and monthly mean upper air temperatures, dew point depressions, and wind velocities for approximately 500 observing sites.

Local Climatological Data

LCD publications summarize temperature, relative humidity, precipitation, cloudiness, wind speed and direction observations for several hundred cities in the U.S. and its territories. Each monthly publication also contains the 3 hourly weather observations for that month and an hourly summary of precipitation. Annual **LCD** publications contain a summary of the past calendar year as well as historical averages and extremes.

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